

A Map and Record Investigation of HISTORICAL SITES AND SHIPWRECKS ALONG THE SACRAMENTO RIVER Between Sacramento City and Sherman Island

Prepared by

Land Location and Boundary Section
on the staff of the

California State Lands Commission



Until this material is reviewed and approved by the Executive Officer of the California State Lands Commission, it is to be considered as tentative and subject to revision. February 29, 1988

LEGISLATIVE CHARGE

As part of the 1985/86 budget, the State Lands Commission was requested to locate, document, and investigate the significant ships and artifacts from California's rich historical heritage along the Sacramento River. In general, we were charged with:

- Inventorying, mapping, and cataloging all known points of historical significance along the River, including ports, wharves, piers villages, and ship sinkings.
- Preparing costs estimates for an electronic survey using magnetometers, side-scan sonars, and sub-bottom profilers for the purpose of locating historic ships and artifacts.
- Preparing cost estimates of a program of field verification of selected locations.
- Considering contracting all or part of the study with "outside entities" and shall consider contracting for consulting services with the State Historic Preservation Office.

An exact copy of the authorizing budget item is included in this report. See the table of contents for the page.

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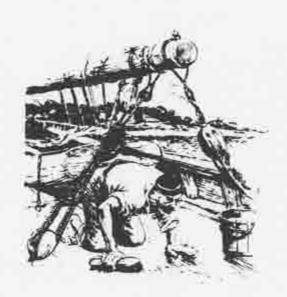
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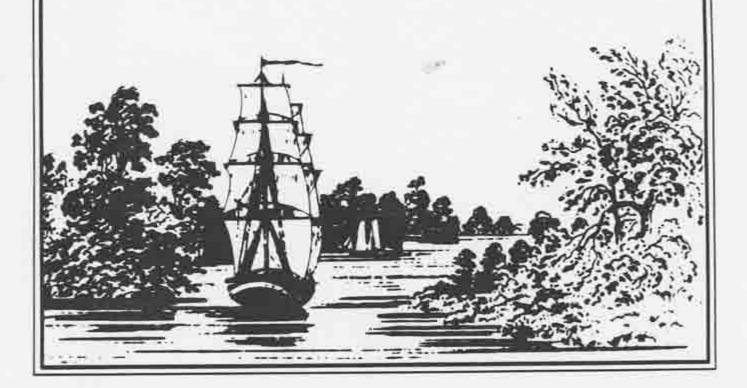
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INTRODUCTION

Purpose - Scope - Benefits



Purpose

The report was prepared in response to a legislative request contained in the 1985/86 budget act. The exact nature of the request is reprinted on page XX. The report has been divided into two parts. This, the first part, presents the results of our research that is relevant to the charge by the legislature. The second part, bound separately, is titled Analysis, Conclusion, and Recommendations to Accompany A Map and Record Investigation of Historical Sites Along the Sacramento River.

The reports were bound separately since many people may want

only one part or the other.

All of the staff who researched this project found much material of interest, but not related to identifying historic sites. We decided to share this material by including it in the report. Several methods were used. First, a collection of the most relevant and interesting anecdotes were selected and these are found throughout this volume of the report. They are set apart from the text by a border and a lightly patterned background, and are identified in the table of contents as Vignettes.

The second literary device that was used is the Appendix, entitled A Historic Reprise. This contains an interesting short history of the Sacramento area. Perhaps it will be interesting to many Sacramentans; it will certainly help the many people who have expressed interest or helped in the research, but live throughout California, and in many parts of the United States.

Our research produced many photographs, some never before published, and we found many lithograph prints that were charming. These were included, usually on portions of pages that would have been otherwise blank; we hope the reader finds these helpful in creating a historical mood appropriate to the subject matter.

The drawings on the pages that begin each chapter are excerpted from the first sailing and navigation chart of the Sacramento River, surveyed by Cadwalader Ringgold, USN, in 1841 and 1849. The drawings were navigational aids in a time before photography could be used to perpetuate landmarks and landfalls. A facsimile of this map is available, upon request, from the Land Location and Boundary Section Library, in the State Lands Commission.

The engraving printed on the back of this volume is a portion of "View on the Fruit Ranch of Henry W. Myers, Steamboat Slough, Grand Island, Sacramento, California. It appeared originally in the 1880 History of Sacramento County by Thompson and West. The front cover of this volume was composed by staff, using a map of the Sacramento River from the J.C. Boyd collection in the State Lands Commission Boundary Library.

SCOPE

This report begins at the mouth of the Sacramento River, and runs up the river to the I Street Bridge. However, virtually no emphasis was placed on the river adjacent to Old Sacramento; this area has been studied by experts in a wide variety of fields, and we would have been able to provide little additional information. It would have been a waste of money and time. We did, however, use river areas adjacent to Old Sacramento for our tests and

demonstrations of various underwater survey equipment.

As we became involved in the investigation, we discovered that, prior to 1880, very little historical work has been done on inland river boats, boating, and historical sites in our study area. After that, information proliferates but is still seldom compiled in the manner of the professional historian. Much of the historical community's interest seems to have been focused on railroads, gold rush, Sutter's Fort and the Donner Party. We also found that, unlike the usual historical investigations that we undertake, people were not willing to share any significant information that they may have. Perhaps this results from the mystique surrounding shipwrecks; people are titillated by the prospect of hidden treasure or artifacts — with reknown the reward for the historian and archaeologist, and financial gain for the divers and salvors.

BENEFITS

The major benefit from this investigation is that a body of knowledge, collected by skilled historical investigators with special cartographic and surveying skills, provides, at less that the budgeted cost, one more tool for decision makers to do their jobs.

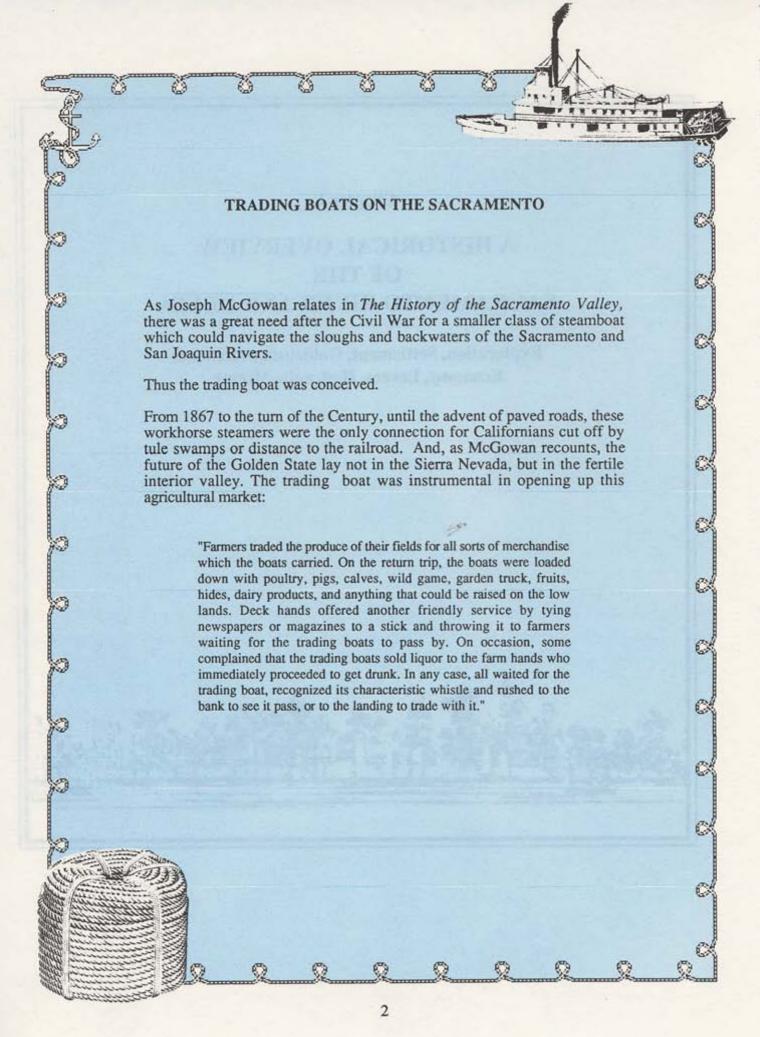




A HISTORICAL OVERVIEW OF THE SACRAMENTO RIVER AND DELTA

Exploration, Settlement, Goldrush, Statehood, Economy, Levees, Hydraulic Mining







THE ETHNOHISTORY, HISTORY AND HISTORICAL ARCHAEOLOGY OF THE LOWER SACRAMENTO RIVER

by

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Editor's note: Dr. Goldfried's report was included in its entirety, without editing, and contains its own bibliography. The recommendations and advantages of further work are Dr. Goldfried's views, and are not neccessarily those of the staff who prepared this report.

The path of the goldseeking Forty-niners, the supply line for the Mother Lode and the Central Valley, the route traveled by the food and materials needed by the Nevada silver mines - the lower Sacramento River was northern California's main artery of trade and transportation until long after

the building of the Central Pacific Railroad.

The lower Sacramento River of 1986 is not the same river used by the Native American tribes prior to white contact, nor is it the same river seen by the first Spanish explorers, nor is it the same river traveled by the "Forty-niners," nor is it the same river as that which brought goods and supplies to the Central Valley until its role in transportation was filled by the railroads. Man and nature, but chiefly man, have markedly changed the river and its surroundings.

A great watery Delta has been drained and surrounded by levees, the river bed and channel have been altered by the billions of tons of debris washed out of the Sierras and foothills by hydraulic mining, agriculture and settlement have altered the nature of the riverbanks, the introduction of non-native vegetation and animals have produced a totally new flora with the net result that little of its earlier state remains today. Much of this change is directly related to trade, commerce and industry on the Sacramento river in the 19th century.

Real understanding of the lower Sacramento in the 19th century can only be achieved via a multidisciplinary approach combining anthropology, archaeology and history. Any separation would be artificial and leave great gaps in understanding the course of events during the 19th century. The anthropology (ethnohistory), history and historical archaeology of navigation, settlement and trade on the lower Sacramento river is divided

into four phases:

 the historic Native American tribes lasting until the destruction of their villages along the Sacramento River;



- the period of early exploration ending with the arrival of John Sutter in 1839;
- the period of the Gold Rush and ending in 1863 with the building of the Central Pacific Railroad;
- 4. the post 1863 period.

These phases are somewhat arbitrary and overlap to some degree.

THE NATIVE AMERICANS

The Native American groups who lived in the area of concern of this project include the Plains Miwok, Bay Miwok, Patwin, and Nisenan or Southern Maidu. (See Map !.)

The Patwin occupied the southern portion of the Sacramento Valley from the town of Princeton on the upper Sacramento to San Pablo Bay. While most of their riverine villages were located on the Upper Sacramento, their villages along Putah and Ulitas Creeks used the river. The west bank of the Lower Sacramento and the area of Montezuma Hills are described as "unclaimed and utilized by more than one group." (P. Johnson 1978:351.)

Missionization affected the Patwin as early as 1800 with the arrival of priests from Mission San Francisco. Assimilation and/or destruction of the Patwin villages on or near the lower Sacramento River was complete by the early 1850's.

The Nisenan (often called the Southern Maidu) were primarily the occupants of the American and Yuba river drainages but did occupy a small portion of the Sacramento River both north and south of its junction with the American River. One important subdivision of the Nisenan had its center at this point with two important villages, Momol and Sama, being within the area of this project. It was these Nisenan and those from other villages who John Sutter encountered when he founded New Helvetia in 1839. The Valley Nisenan had already been decimated by the great malaria epidemic of 1833 and many villages had been wiped out - as much as 75% of the total population died. The Nisenan were not missionized but did take in escaping missionized Indians and displaced Miwok villages from the south.

The Plains Miwok occupied both banks of the Sacramento River from Freeport to Rio Vista. Ten tribelets, each consisting of several permanent settlements, were resident in this area. The Bay Miwok (Saclan) occupied the eastern portions of Contra Costa County from Walnut Creek eastward to the Sacramento-San Joaquin Delta. Sherman Island and the west bank of the Sacramento River below Rio Vista was part of Bay Miwok territory. Sherman Island was occupied by the Julpun tribelet of the Bay Miwok and the Quenemsia tribelet of the Plains Miwok while the west bank of the Sacramento River below Rio Vista was occupied by the Ompin tribelet of the Bay Miwok. (Levy 1978:398.)



The Bay Miwok first underwent missionization in 1794 at Mission San Francisco while the Plains Miwok and most of Bay Miwok were taken to Mission San Jose after 1811. A cycle of escapes by Miwok. Spanish expeditions to bring them back, Miwok raids on missions and ranchos, and Spanish reprisals was quickly established. Many Miwok villages and tribelets were wiped out by the combined effects of removal to the missions and the epidemics of the 1830's. Many Plains Miwok became involved in agricultural work on the land-grant ranchos. Members of the Miwok Ochehamne tribelet were employed at Sutter's Fort.

The Effects of the Spanish Missions

Indian life along the lower Sacramento had undergone stress and dislocation as the result of European contact since the establishment of the missions at San Francisco (1776) and San Jose (1796). The process was accelerated when missions were founded at San Rafael (1817) and Sonoma (1823). The impact of missionization was enormous. It was not simply a question of baptism and acceptance of Catholicism, it was a total uprooting of individuals and entire villages and their movement, under the institution of reduccion, to the missions. Its aim was the total destruction of Native American culture and the creation of a Indo-Spanish society.

The missionized Indian was not free to leave, was subject to strict harsh discipline, hard work, and worst of all, the whims of a totally alien culture. Accusations of slavery and mistreatment were frequent, with even mission Franciscans filing reports depicting the excesses of their fellows. Padre

Horra charged:

The treatment shown to the indians is the most cruel I have ever read in history. For the slightest things they receive heavy floggings, are shackled, and put in the stocks, and treated with so much cruelty that they are kept whole days without a drink of water. (Bancroft 1886 1:593.

Exposure to disease, bad sanitation, malnutrition, cruelty, and cultural shock all served to reduce the numbers of Mission Indians and the population in general. Bowman gives us an idea of the human cost of missionization - only 15,00 neophytes survived conversion out of 53,600 baptized in the Mission period, 1769-1836. (Bowman 1958). Abortion and infanticide were frequent among the Mission Indians.

Runaways were pursued by soldiers, villages destroyed for harboring fugitives, entire villages fled to escape the danger of forced resettlement and disease. Plains Miwok and Bay Miwok were caught up in these disruptive movements. Veneral disease became widespread and other European diseases; measles, diphtheria, and other respiratory diseases attacked tribe after tribe.

After the secularization of the missions (1834) during the Mexican period, a new form of exploitation and cultural breakdown came into being. Mexican land grant holders converted numbers of Patwin, Maidu and Plains



Miwok into peons, held frequently in debt servitude. Hostilities between the tribes and the Mexican ranchos and settlements were frequent with raiding and reprisals as constants. One must conclude secularization was nothing more than further stress on the Native American population.

European disease continued to ravage the lower Sacramento tribes. Indians fleeing from the missions and those returning after secularization brought European disease with them. A great smallpox epidemic in the 1830's reduced the lower valley population. This was followed by the Pandemic of 1833, malaria spreading south from the Columbia River area, struck tribe after tribe. Cook estimates, on the basis of horrifying contemporary accounts, that as much as fifty percent of the population died.

(See Cook 1955 for these documents).

This was followed by later epidemics of smallpox (1837 among the Patwin, 1844 among the Miwok), scarlet fever and cholera. The death toll was enormous between 1830 - 1845. Cook estimates the death toll to have been over 100,000, leaving an Indian population in all of California of 150,000 just prior to the Gold Rush and the American period. A disaster of enormous magnitude but yet the tribes did survive in spite of all of the disorientation produced by these diseases. The Hispanic population was only a few thousand, mainly along the coast, who viewed the Indian as a valuable source of labor and who, also, accepted the idea of miscegenation. A real attempt was made, disasterous as it was, to incorporate the Indian into the colonial economic and social order.

This changed with the discovery of gold and the influx of the Americans. Their numbers were huge, they covered the valley and the foothill and the sierras, there were no refuge areas away from these whites. There was no role for the Indian in American society - he really was not wanted as a labor source. Miscenenation, accepted by Hispanics for the lower class, was totally rejected by Anglo-American. "Half-breed" was a totally negative

term, an insult, "fighting words."

Schuyler offers another but somewhat similar explanation:

... When the gold rush and farming potential of the state drew in literally tens of thousands of immigrants in a year's time, a total society was transformed into California overnight. In this situation, with few exceptions, the Indian had no economic function. In 1850 the relationship between the Anglo and Indian was closer to that between a man and a natural feature that happened to exist, and happened to be in the way, than between one culture and another.

... There was a place for the Indian in Spanish California; in fact, he was an integral part of its economic underpinning. There was a continuing place, albeit much less important, in Mexican California; but the nature of Anglo culture



excluded him and forced him close to extermination. (Schuyler 1978:79.)

Archaeological excavations in Old Sacramento and the various mining camps of the Mother Lode shows no signs of Indian involvement in these communities. This is a far cry from the archaeological and historical evidence from Sutter's Fort where evidence of close contact and Indian involved is clearly demonstrated in the archaeological record. (Olson 1961, Paven 1961.)

The lower Sacramento tribes were directly in the path of the Gold Rush and the rapid alteration of their environment, the destruction of either many of their major food resources or the denial of access to these resources and the constant Anglo hostility caused the villages along the lower Sacramento

to be among the first to vanish.

A summary of the effect of American contact on the surviving Indian population during the period 1845 - 1855 is provided by Cook:

The decline in the worst decade, 1845 to 1855 was incredible-from approximately 150,000 to 50,000. This desolation was accomplished by a ruthless flood of miners and farmers who annihilated the natives without mercy or compensation. Three direct causes of death were disease, the bullet, exposure, and acute starvation. The more removed causes were insane passion for gold, abiding hatred of the Red man, and complete lack of any legal control. (Cook 1978:93.)

Native American Use of the Lower Sacramento River.

The tule balsa boat was the principal vessel used by the Native American groups along the lower Sacramento. (See Fig. I.) For simple river crossings, a bundle or group of bundles of tule reeds was adequate but for any other kind of water travel, a vessel with raised sides and a point and elevated prow was constructed. This was propelled by a pole. (Kroeber 1922.)

Kroeber's description of the Patwin tule balsa is informative:

Large boats for travel downstream might be twenty feet long and six or more in beam. Those for crossing the river were smaller. All were quickly made. There was no bladed paddle, but plain wooden poles were paddled with. In the tules, progress was by poling. It was impossible to travel upstream in these balsas. (Kroeber 1932:283.)



The use by the Nisenam of a dugout canoe is mentioned by Wilson and Towne 1978:380. Nisenan tule balso boats used one or two logs in the bottom of the craft to provide greater stability. (Wilson and Towne 1978:392.)

The Miwok balsa boat was made of about 20 bundles of reeds. Better rigidity was gained by the use of willow poles for gunwales and eight external ribs of willow. (Levy 1978:406.) Boats do not appear to have been used for long distance travel but for fishing and the hunting of waterfowl. It is noteworthy that all discussions of Native American trade emphasize land routes and there is no explicit mention of any major role played by the Sacramento River in the process of trade and exchange.

Native American exploitation of the Sacramento River was chiefly fishing. Salmon, sturgeon, whitefish, chub, pike, and trout were taken

using dip nets, seine nets, weirs, fish traps, spears and harpoons.

THE PERIOD OF EXPLORATION

Exploration of the Sacramento River began in 1772 when Father Juan Crespi and Don Pedro Fages stood on Mt. Diablo and looked down on the delta and the lower Sacramento and San Joaquin rivers. The founding of the mission at San Francisco, four years later, was to give impetus to further exploration of the area. The mouth of the Sacramento was seen by explorers of San Francisco Bay and named the San Roque.

In 1808, Lieutenant Gabriel Moraga, while seeking mission runaways, reached the lower Feather River in the vicinity of Nicholas and named it the Sacramento. On October 10, 1808, moving west from Sutter Buttes, he encountered the Sacramento River near Stony Creek, naming it the Jesus

Maria.

European vessels first entered the Sacramento River on October 23, 1811. An expedition headed by Fathers Abella and Fortini, and commanded by Jose Antonio Sanchez, entered "the northern river of San Francisco." After a short voyage on the Sacramento, they turned into the

San Joaquin before returning to the Presidio of San Francisco.

May 13, 1817 marks the first major exploration of the Sacramento River from its mouth northward. Luis Arguello led twenty men, and Padres Duran and Abella in two launches into the river. After camping at Montezuma Sough and Rio Vista, the expedition proceeded north until May 20, 1817 when they turned back after marking their furthest point by

carving a cross into an oak.

While Dana states this was near Freeport 1939.39 lit must have been further north since the diary of Padre Duran describes the Sutter Buttes as being visible to the north and the current swept them fourteen leagues in the first day of their return voyage. The most probable northernmost point reached by this expedition was near the junction of the Sacramento and the Feather River. Thus it is the 1817 Arguello expedition which was the first to explore the Sacramento River to and above the location of Sacramento.



Arguello led a second expedition into the Sacramento Valley in 1821. This a land expedition followed the Sacramento River north to the general area of Redding. All of the Spanish expeditions mentioned many Native American villages and clearly indicate a large population along the river.

Exploration of the Sacramento River did not long remain a Spanish monopoly. In 1824, Captain Otto von Kotzebue of the Imperial Russian Navy sailed upstream with two boats and twenty Aleut hunters from Fort Ross. Bancroft believed that Kotzebue may have reached the mouth of the American River (1886 11:523) while Dana places the furthest extent of his voyage at Freeport (1939:45.) It was the botanist attached to the Kotzebue expedition who first described and named the California poppy (Eschscholtzia California.)

Great Britain sent Captain Sir Edward Belcher and H.M.S. Sulphur to investigate and chart the Sacramento River in 1837. He sent two ship's boats "150 miles upstream to the head of navigation" and produced the first chart

of the lower Sacramento River. (Bancroft 1886 IV:143.)

Jedediah Smith was the first American to reach the Sacramento River, following it north to the vicinity of Red Bluff in April of 1828. Smith believed the Sacramento was the Buenaventura, the legendary river thought to flow west from the Rocky Mountains to the Pacific. The search for this legendary stream did not end until the explorations of John Fremont finally laid the notion to rest.

After a journey which took him from Switzerland to St. Louis, to Fort Laramie, on down the Columbia to Fort Vancouver, where the lack of any vessel forced him to the Sandwich Islands (Hawaii). He then chartered a ship, loaded it with supplies and sailed to Sitka, to Monterey then to Yerba Buena (San Francisco) finally setting said in two schooners, the Nicholas

and the Isabella, for the Sacramento Valley on August 1, 1839.

Sacramento (New Helvetia) was founded by John Sutter on August 15, 1839. The establishment of New Helvetia, together with the settlements and ranches established by Petter Lassen, John Sinclair, John Bidwell, Theodore Cordua, William Knight, William Chard and many others marks the beginning of constant and regular traffic on the Sacramento River. In 1841, Sutter purchased Fort Ross for \$30,000. Part of his purchase was a launch, quickly renamed the Sacramento. The honor of being the first vessel to make regular voyages between Sacramento and San Francisco (Yerba Buena) belongs to this launch. It took approximately two weeks to make the round trip voyage to San Francisco.

In 1847, the Sitka was the first steamboat to sail the Sacramento. Purchased from the Russia America Company by William Leidesdorff, it was reassembled on Yerba Buena Island. A tiny side-wheeler, only thirty-seven feet long, it was so underpowered that it barely was propelled by its steam engine. Finally sailing on November 29, 1847 for Sutter's Fort, it took six days to make the voyage (slower than a man walking) and then, on the return voyage, an ox team which left Sacramento at the same time beat the Sitka to Benicia. Its engines removed, the Sitka was converted to a sailing vessels and renamed the Rainbow. This ill-fated vessel sank in San

Francisco Bay before the end of 1848.



THE GOLD RUSH ERA

The discovery of a few shining flakes of gold in the millrace of Sutter's Mill at Coloma by John Marshall on January 24, 1848, set in motion an enormous migration, invasion is a better term, of gold seekers. Sutter's Fort could not hope to meet the needs of this influx of gold seekers who were short of everything but dreams and enthusiasm. It was this sudden and incredible demand for goods and services which led to the founding of

both Suttersville and Sacramento.

Soon after the founding of New Helvetia, John Sutter had his Indians build a roadway between his fort and the Sacramento River, just below its junction with the American River. This, he named the Embarcadero, intending it to be simply a port. Sutter was aware that most of the area between his fort and the Embarcadero was subject to frequent flooding and so could not, in his opinion, serve as the location for a new city. It was his intention to found a town on higher ground, less subject to flooding, and possessing a good anchorage for ships. Choosing a site to the south of the Embarcadero, he named it Suttersville.

Ironically, it was Sutter's son, John Sutter, Jr. and Sam Brannan who were responsible for the success of Sacramento and the failure of Sutter's plans. The constant arrival of ships at Sutter's Embarcadero, their discharge of passengers and goods, and their subsequent abandonment by their crews, and the more direct access via the American River to the gold

fields, helped make Sacramento a success.

Brief competition between the two would-be cities for control of the trade in the Sacramento Valley included the selling of lots at low prices, offering merchants free lots if they would move to the other city, getting storeships to anchor in the river, constructing needed roads and so on. The merchants of Suttersville, in desperation, made a fatal offer to undersell anyone in the area. The merchants at Sutter's Fort then proceeded to buy all of their stock, leaving them nothing to sell to the Argonauts of 1849. The final blow came when Bidwell, McKinstry and Hastings (the promoters of Suttersville) quarreled and Suttersville withered away.

One hundred thousand gold seekers descended on California, Sacramento, and the gold fields in 1849. How were they to be supplied, housed and fed? Prices were unheard of. "A person accustomed to paying six cents a pound for beef, six cents for cheese and five cents for bread, found the Sacramento prices were fifty cents, a dollar and thirty or forty cents respectively. (McGowan 1961: I:56.) Milk was a dollar a quart, butter

three dollars a pound, and whiskey was one dollar a shot.

This enormous market could not help but attract merchants and shippers to meet the need and make what appeared to be and were at first, enormous profits. Two ocean-going ships, the Joven Guipuscoana owned by Sam Brannan and the Eliodora owned by Hensley and Reading, reached the Sacramento area in March/April 1849 demonstrating the Sacramento River was open to navigation by large vessels. The Whiton, a bark, was the first ship bearing cargo from the East Coast whose stated destination was Sacramento, reached Sacramento on May 2, 1849.



Almost as quickly as sailing vessels ships anchored, their crews jumped ship and headed for the gold fields. These abandoned vessels were turned into stores, warehouses, and hotels and there was a line of 24 ships tied, two deep, to the riverbank at the Embarcadero by July I, 1849. (The wrecks discovered by the Sacramento Redevelopment Agency may part of this group of vessels.) One abandoned bark, the La Grange, served as Sacramento's jail from 1850 until it sank in 1859.

Today, it is almost impossible to appreciate the role played by the Sacramento River in the economic life of the Sacramento Valley and the Mother Lode prior to the building of the railroads. All goods, after long voyages (four months was usual) via Cape Horn, were unloaded in San Francisco and then moved upriver to Sacramento and other river towns. While goods and passengers did travel by land, it was both expensive and uncomfortable. It was the river communities that served as the centers of both settlement and trade.

Since sailing vessels took a week or more to make the voyage to Sacramento, steamboats were the only solution to the problem of supplying the towns and the mining camps. Steamboats of greater size and power than the ill-fated Sitka.

The first successful steam navigation of the river was by the steamboat, the Senator, reached Sacramento on November 5, 1849. It made three round trips a week and carried three hundred passengers and three hundred tons of freight per trip. Charging thirty dollars for a one way trip and thirty dollars a ton for freight, the Senator made a monthly profit of sixty thousand dollars. Such profits meant more steamboats, these were built, and the competition and rate wars forced fares and rates down to a third of their previous high. By 1853, six first-class steamboats were providing Sacramento with service.

Competition meant racing for "the fastest boat on the river." Racing meant excitement, gambling and accidents. Running aground, collisions, and boiler explosions (the R. K. Page) were common.

The demand for goods was great, the number of ships sailing the Sacramento River in 1850 with substantial with two hundred-three vessels arriving at Sacramento in the summer of 1850. Traffic at the Embarcadero reached 426 vessels in 1851. Tonnage was great, in 1852, 165,000 tons, 1853 a decrease to 103,000 tons and a further drop to 98,000 tons in 1854. The drop was due to the departure of many miners from the gold fields as the easily accessible place deposits were worked out. There would be a great revival of business and navigation with the discovery of the Comstock Lode in 1859.

Domination of the steamboating on the Sacramento was achieved by the California Steam Navigation Company soon after its incorporation in 1854.

Made up of the owners of the Confidence, Colusa, Governor Dana, New World, Antelope, Helen Hensley and Sam Soule, it achieved a virtual monopoly by price cutting, gaining control of wharfs and piers and general harassment. Opposition boats and companies either went bankrupt due to these tactics or agreed to a common set of rates.

California Steam Navigation built the Chrysopolis, the "Queen of the



Sacramento." in 1860. Built by John North, everything that went into her construction was the best and the finest. North personally selected the timbers, purchased the finest engine from New York rated at over 1300 horsepower. Painted white on the outside, with an interior color scheme of white and gold, hung with paintings by Bierstadt, Hill and other California artists, with cabins and public rooms filled with costly "appointments" (furnishings), the Chrysopolis was as fine a steamboat as ever sailed an American river.

Powered by superb engines, 245 feet in length, the Chrysopolis set a record of five hours and ten minutes for the Sacramento-San Francisco runit was never beaten. After the silting up of the Sacramento River, the Chrysopolis was moved to San Francisco Bay, remodeled and became, in 1875, the ferry, Oakland. The Chrysopolis served as an Oakland-San Francisco ferry until the completion of the Oakland-San Francisco Bay

Bridge. It burned while being salvaged in 1940.

Sacramento was the head of navigation for ocean going vessels and large steamboats. The shallow water of the upper Sacramento and the Feather River required all freight to be trans-shipped in shallow draft steamers and barges drawing less than 4 inches of water. The problems of navigation on the upper Sacramento and Feather River were magnified after 1853 by the deposition of debris from hydraulic mining. (The upper Sacramento River and the Feather River are outside the scope of this project.)

Settlement Along the Lower Sacramento

The history of settlement along the lower Sacramento is marked by: bogus or speculative towns; the sudden shift of a town site due to severe flooding; the rise and death of communities as a result of the moving or establishment of a post-office, the building of a wharf, the building of the railroad and the silting up of the river. There are numerous examples of these processes.

Stephen Massey, a salesman for a land speculator, describes the creation

of a pseudo-town:

Thus towns were conceived in the minds of speculators, some were stillborn while others had a brief and rapidly terminated life. Onisbo, laid out at the mouth of Steamboat Slough in 1849 with an unsuccessful expectation of being the head of deep water navigation rather than Sacramento, lost its post office to Courtland and vanished by 1867. Emmaton, below Rio Vista, vanished in the flood of 1876.

McGowan sums up the role of the Sacramento River in land speculation:

Effective shallow draft steamboat began to run up and down the river about December 1849, and their number was greatly increased during 1850. Their



Their arrival introduced an important question: Where was the head of navigation? At that point an important commercial town would arise, for it would allow ships to bring freight as close to the miner as possible, as cheaply as possible. The problem was that no one knew the vagaries of the river, how deep the water was in September. when the important fall trade began, or where the sand bars were located. Nevertheless, many speculators, intent on making their fortune by laying out towns and selling lots, claimed this or that location was the head of navigation. The result was a series of "paper towns," cities of illusion that existed primarily on paper and sometimes with a few building put up to impress the unwary investor. As the navigability of the river changed with the season and the year, most of these towns disappeared. The promoters could not lose: if their town proved to be the head of navigation, they could make a fortune; if this happy event did not develop, they took the profits from lots sold and went on their way.

Permanent communities had a checkered history. Brazos del Rio, surveyed in 1857, underwent a quick name change to Brazoria. The building of a wharf and the establishment of a post office gave the young community prestige and encouraged further growth as it supplied the local farming and salmon fishing industry and provided a means for shipping their products. The Brazoria was rechristened Rio Vista in 1860. The city moved to is present location after the great flood of 1862.

The Sacramento Valley Railroad and Freeport

No community's history along the lower Sacramento shows as direct a relationship with trade and transportation in the Central Valley than Freeport. Freeport's founding in 1863 was nothing more than an attempt to avoid or evade taxes by the Sacramento Valley Railroad.

The Sacramento Valley Railroad, officially opened February 22, 1856, ran from Sacramento Folsom. Its initial low profits and financial difficulties were ended by the discovery of the Comstock Lode in Virginia City in 1859. As the sole carrier of freight to Folsom (the point of departure for all goods

by wagon to the Comstock Lode), it became immensely profitable.

In 1862, the city of Sacramento demanded payment for back taxes and the maintenance of the streets over which the railroad passed. In addition, the railroad was seen as responsible for much of the damage caused by the flood of December 9, 1861 when water flowing south was blocked by the railroad trestle and the debris trapped by it, causing the city to be covered to a depth of two to four feet. The city ordered the tracks from 6th Street to the levee torn up, forcing the railroad to haul freight to 6th Street by wagon,



and then placed taxes and charges for the transportation of goods from the Embarcadero to the railroad depot.

Finally in 1863, the railroad built a ten-mile line from Brighton south to the Sacramento River thus freeing the railroad from city taxes and charges. The route functioned until it was taken over by the Central Pacific Railroad in 165 at a cost of \$800,000. With the tearing up of the Freeport-Brighton line, Freeport was soon reduced to nothing more than a ferrypoint on the Sacramento River.

The Comstock Lode, mentioned above, immediately influenced the lower Sacramento River. Veins of ore with a gold and silver content of three to four thousand dollars a ton were commonplace. The great mines of the Comstock Lode and the miners of Virginia City, Gold City and the Carson Valley could only be supplied via Sacramento and the Sacramento River. Traffic on the Sacramento increased the railroad brought the supplies to Folsom, while freight wagons carried it to Placerville, and an endless stream of teamsters hauled them over the mountains to the Carson Valley and the Washoe.

The magnitude of this traffic is astonishing. A single week in October 1862, saw 739 wagons leave Folsom for the comstock. A eyewitness calculated 320 tons of freight moved via Placerville to Nevada every day. It is worth considering that all of these supplies took three - five months by sailing ship to reach California via Cape Horn. Most of the food for the Washoe and Virginia City came from the Sacramento Valley.

"Slickens" and the Lower Sacramento River

During the period 1853 - 1878, navigation, trade, agriculture and life in general along the lower Sacramento were being rapidly altered by a new man-made problem - the debris from hydraulic mining. The technique of using powerful streams of water to wash away the rock, earth and clay that covered the gold bearing gravels were first developed in 1853. The dry or moderately wet years that followed prevented any major deposition of this sand, gravel and "slickens" in the lower Sacramento but it had begun to interfere with navigation on the Feather and Yuba Rivers and the upper Sacramento.

The floods of 1861/62 and the great floods 1875 and 1878 brought down the entire mass of accumulated debris - destroying fishing, permanently ruining agricultural lands, wrecking water supplies, and raising the bed of the river. Raising the bed of the river meant the river would flood more easily and this period saw the almost constant breeching of levees and the flooding of the Delta Islands. One consequence of this deposition of billions of cubic yards of debris was the closing of many rivers to navigation - the Feather River, the American River and the Bear River were virtually closed to navigation and navigation between Sacramento and Marysville became more and more difficult.

A sandbar grew to alarming size in front of Sacramento's Embarcadero making it impossible for deep draft steamers to tie up. This sandbar was disposed of in what became one of the finest pieces of Sacramento



steamboat lore. The substitute master of the Goodman Castle, angered by the interference of the bar, tied a number of plows together, dropped them overboard, and dragged them up and down. This chewed up the bar and the "stickens" washed downstream.

The navigation on the lower Sacramento was markedly affected by the deposition of hydraulic debris. The largest steamboats on the river in the 1860's were the Yosemite (1,032 tons), the Capital (1,625 tons) and the Chrysopolis (1,086 tons) - the most beautiful steamboat to sail the Sacramento and the holder of the Sacramento-San Francisco speed record of five hours and ten minutes. The build up of debris effectively closed the lower river to them and they were altered to serve as ferries on San Francisco Bay. In 1873, the largest steamboats on the lower Sacramento were much smaller; the Amador (864 tons), the Sacramento (700 tons) and the Julia (520 tons). The shallowness of the channel is indicated by the size of the fourth largest boat on the river, the S. M. Whipple, a mere 350 tons, less than a third the size of the great boats of the 1860's.

Changes in channel depths included: Steamboat Slough from a depth of twelve feet in 1853 to a mere five feet in 1879 thus closing it to steamboats; the bed of the river at Sacramento had risen fifteen feet; and Suisun Bay had

virtually been filled in by hydraulic debris.

Hydraulic mining was declared illegal in 1884 and gradually decreased over the years. The damage had been done, debris was still washing out of the mining areas and it was not until the twentieth century that the rivers began to scour themselves of accumulated debris.

THE RAILROAD AND THE RIVER

Conventional wisdom leads one to expect that the building of the Central Pacific Railroad meant the rapid demise of steamboating on the Sacramento. This was not the case. The steamboats and the dominant company, the California Steam Navigation Company, were seen by the railroads as genuine competition. This is demonstrated by the purchase of the California Steam Navigation Company by the California Pacific Railroad Company (Sacramento to Marysville). The purchase was an attempt to control or reduce competition for both passengers and freight. Both companies were taken over by the Central Pacific in 1871.

This purchase by the Central Pacific, soon to become the Southern Pacific Railroad, was not an attempt to destroy steamboating. It was an attempt to control all transportation to Sacramento. The steamboats were part of one of the most successful and profitable transportation operations in United States history. When steamboats could carry freight cheaper than by

rail, it went by river. If not, it traveled by rail.

Passenger traffic was encouraged and was immensely profitable, causing the Southern Pacific to spend millions on the construction of new steamships of which the last, built in 1926, were the *Delta Queen* (now sailing the Mississippi) and the *Delta King* (now under reconstruction in Old Sacramento).



LANDINGS, AGRICULTURE, AND THE RIVER

The profits made by those farmers who supplied the "Forty-niners" were as spectacular as those made by the owners of the Senator. One farmer made more than thirty thousand dollars while another farm showed a profit of

thirty eight thousand dollars in 1850.

The expansion of agriculture along the Sacramento began in 1855 with the sale of government lands and final decisions by the Lands Commission on the validity of Mexican land grants. Orchards, herds of cattle, flocks of sheep, grain fields, vegetables flourished. The crops were brought to Sacramento by steamer but more often by sloops and schooners that sailed the river, stopping at landing after landing to bring the produce to urban markets. These produce boats are represented in many of the engravings and prints of the time (See Wright 1880 for examples).

Small steamboat companies came into being to meet the needs of farmers. The California Transportation Company, formed in 1875, was the most important of these companies. Its fleet of small steamers stopped at all farmers' landings to pick up freight - a far cry from the big river steamboats which only stopped at Sacramento, Rio Vista and Benicia. The company also operated two large steamboats, the S. M. Whipple and the calliope

bearing Chin-Du-Wan.

These steamboats stopped at all landings between Rio Vista and Clarksburg. This could mean as many as sixty-five different landings on a single trip. The lower Sacramento had as many as two hundred landings but no extant map lists all of them. This is due to the nature of the landings. Some were substantial constructions with pilings and heavy timbers (these are usually indicated on maps of the time and the remnants of a few of these may still be seen along the levees today) while many were nothing more than piles of brush made by a single farmer.

It is extremely difficult to date any remains of landings along the Sacramento River. Many, if not most, postdate the period of concern to this project and farms and orchards have changed hands many times since the 1870s. Limited information is provided by the illustrations in Thompson and West's History of Sacramento County. This volume published in 1880 shows many of the important farms, orchards and ranches of the lower

Sacramento.

Examination of the illustrations shows the following. There are fourteen river front scenes of farms and ranches. Only three show any kind of wharf, pier or permanent landing. Small steamboats are shown being loaded with goods by use of a gangplank. Sheds to protect produce and goods from the elements are represented but permanent landings seem to be quite rare and were limited to the major towns along the river and certain large farms and ranches.



RECOMMENDATIONS FOR FURTHER WORK

The most important portion of the archaeological aspect of this study are the sunken ships and shipwrecks. Underwater archaeology is very different from dry land archaeology and it is necessary to understand these limitations since they all have one major consequence for any project - a marked increase in cost.

The location of the sunken ships of the lower Sacramento River involves a three stage process. First, the archival research to determine the approximate location of shipwrecks; second, electronic remote-sensing device searches to determine probable sites; and third, identification and assessment of such finds by underwater archaeologists. None of these steps are inexpensive but the cost will skyrocket once excavation begins. The cost is a reflection of the nature of underwater archaeology.

Underwater archaeology is affected by problems of visibility at all times. In the silt of the Sacramento River, where any disturbance of the bottom produces a blinding cloud of particles, this is a major obstacle to work. The river current is another factor that wears out underwater archaeologists who

are trying to maintain their position over a single spot.

Water temperature is a problem at all times - it limits the amount of time any diver can spend underwater. The Sacramento is not a warm stream. There is the problem of communication - almost impossible without equipment costing large sums of money. Divers cannot communicate anything complex to each other nor can they communicate with the surface.

A number of psychological studies have shown: dexterity decreases, the recollection of instructions drops, the ability to make observations underwater and remember them when returning to the surface is impaired (Baddeley 1966, Godden and Baddeley 1975, and Godden 1977). Cold and exhaustion are additional factors further reducing the efficiency of divers.

In short, everything takes longer to do underwater.

All archaeological excavation is affected by being done underwater. The removal of backdirt (the silts, clays, etc. excavated from the shipwreck) requires the use of a small dredge and/or an airlift. Surveying, mapping and photographing an underwater excavation demand special equipment and techniques. Every aspect of underwater archaeology is more expensive than the comparable segment of land archaeology. Liability insurance is one such cost.

An underwater excavation cannot be carried out by an archaeologist and a group of volunteer "sport" divers. This type of excavation would result in underwater chaos and the destruction of the sunken vessel with little information being gained. The goal is not to simply rip out artifacts as quickly as possible and bring them to the surface but to learn something about the ship and the society of which it was part. Archaeology is not the search for artifacts but an attempt to reconstruct the past. In order to carry out a scientific investigation, one must have an experienced professional underwater archaeologist, a number of experienced (both in terms of diving and archaeology) field assistants, and a number of carefully selected divers.

It is difficult to establish costs but it is safe to say that any underwater



excavation is extremely expensive and that any underwater archaeology project is approximately six times more expensive than any land excavation of the same duration and with the same size excavation crew.

This is not to be taken as an argument against the proposed project but simply a summary statement explaining why the costs of excavation are

high.

ADVANTAGES OF EXCAVATION OF THESE SUNKEN SHIPS

Preservation of organic material.

Plaint remains, leather, wood, rope, basketry, even paper are preserved in an underwater site. This occurs because the water provides an oxygen-free environment which marked slows the chemical and biological process of decay. Underwater archaeology can provide remains of certain categories of material culture which no land excavation can ever yield. One point must be made: the stabilization and conservation of these materials so they can be studied and exhibited is extremely expensive.

Knowledge of ship construction. A shipwreck site can yield important information about the construction of 19th century vessels. Many were built without formal plans and of those built with formal plans, such as the *Chrysopolis*, few if any of these plans have survived. It would be a significant contribution to the history of marine construction.

"The time capsule." The shipwrecks of the lower Sacramento River are the result of a sudden disaster. We can be reasonably certain everything found in a wreck-site is truly contemporary - in use on the same day in the

same spot.

There are some qualifications to this "time capsule" concept. The most important is the salvaging of cargo, engines, and even the raising of vessels. In a river as shallow as the Sacramento, engines could be easily removed, a very large portion of the cargo saved, and even ships raised and repaired. Archival research will already eliminate any search for a raised vessel. A partial time capsule is still a very valuable and significant find.

The Shipwrecks of the Lower Sacramento River

The location of shipwrecks was determined by an examination of the newspapers of the period. The Alta California, The Sacramento Union, and the Sacramento Bee were checked for information relating to sinkings, cargos and salvage operations. Eighty-three sinkings were located in the lower Sacramento River, of these, fifty-five occurred between 1849 and 1885. A sample of these are discussed below.

The schooner Commodore. A three-masted schooner which sank 3/17/64 after being rammed by the steamer Yosemite - 3 miles south of Freeport. Hit amidship, it sank in 2 minutes, in 10 feet of water. Not entirely submerged. Sacramento Union articles mentions "a request for one



or two schooners to aid in getting the Commodore afloat again." Had a small engine and propeller and was powered by this at the time of the accident. The Commodore was the largest schooner on the river. Cargo was hides, a small quantity of iron, including an iron safe.

It may have been salvaged. The Sacramento Bee says that it was a valuable craft and suggested that it could be salvaged at little expense.

NOTE: The Yosemite met with disaster on October 12, 1865, when its boiler exploded at Rio Vista killing or injuring close to 100 passengers.

The sloop Salinas. Sank on January 5, 1876 as the result of a collision with the steamer New World. Sank near the Brothers and was loaded with

bran which prevented it from sinking out of sight.

The sloop Wasp. While sailing from Freeport to San Francisco, it hit a snag and sank in Steamboat Slough on January 12, 1865. Value was \$2400. Cargo was cobbles and brick. No mention of any recovery attempt and given the weight of its cargo such a task would have been difficult.

The schooner Bianca. A schooner carrying 80-100 tons of assorted cargo, sank at the mouth of Cache Creek. According to the Sacramento Union (10/30/54) "There are two different rumors relative to the cause of the accident - the one that she struck a snag, and the other that she had been hauled up near the bank at night and careened on the ebb of the tide." Loss was 50% of the cargo and it was taken out and forwarded on sailing vessels. No mention of any salvage attempt.

The James Blair, steamer. Sank March 10, 1861 after striking a snag in the Feather River. There was no loss of life, damage to the cargo but a steamer on the following day removed what "freight could be obtained." "The Blair, though sunken, is not entirely submerged." No mention of it

being raised.

The R.K. Page, steamer. While racing with the Governor Dana, its boiler blew near Nicholas, causing the death of the captain, one of the owners, the pilot and the ship's clerk. The force of the explosion blew the dome of the boiler 800 yards. Large number of injured. It sank in six feet of water, the deck was partially covered but it was possible to remove the engines. The wreck "was thought to be too much injured for removal." The R. K. Page had just been refitted at a cost of \$12,000 and was on her first trip.

The Kate Blakiston, schooner. While attempting to jibe in a strong wind, the Kate Blakiston capsized and sank, almost immediately, within sight of the Sacramento Levee opposite Y Street. It sank approximately 100 feet from the east bank. Only the captain was saved, the other two members of the crew, unable to swim, drowned. The cargo was general

merchandise.

A later article describes the Kate Blakiston as a lumber schooner and mentions the salvaging of a steam hoisting engine. The attempt to raise the Kate Blakiston ended because the majority owner would not go to any great expense to raise her.

The next step in this project should be an electronic search of the locations of all the shipwrecks discovered via archival research; and an



evaluation of the results of such an electronic search by an experienced professional underwater archaeologist. Then, and only then, can any reasonable decision be made as to the value of any further work on what could be an extremely important resource for the study of California history.

There is one real danger in all of this work. Publicity can be fatal for the preservation of these shipwrecks. Publication of suspected locations will serve to attract "sport divers" seeking artifacts and will result in the destruction of these sunken ships as historical and archaeological artifacts.





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Chapter 2

SHIPPING ON THE SACRAMENTO RIVER

Types of Vessels, Emergence of Steamboats Shipwrecks - Sinkings and Recovery





Figure 1. Steamer for Marysville passing the bridge in Sacramento.

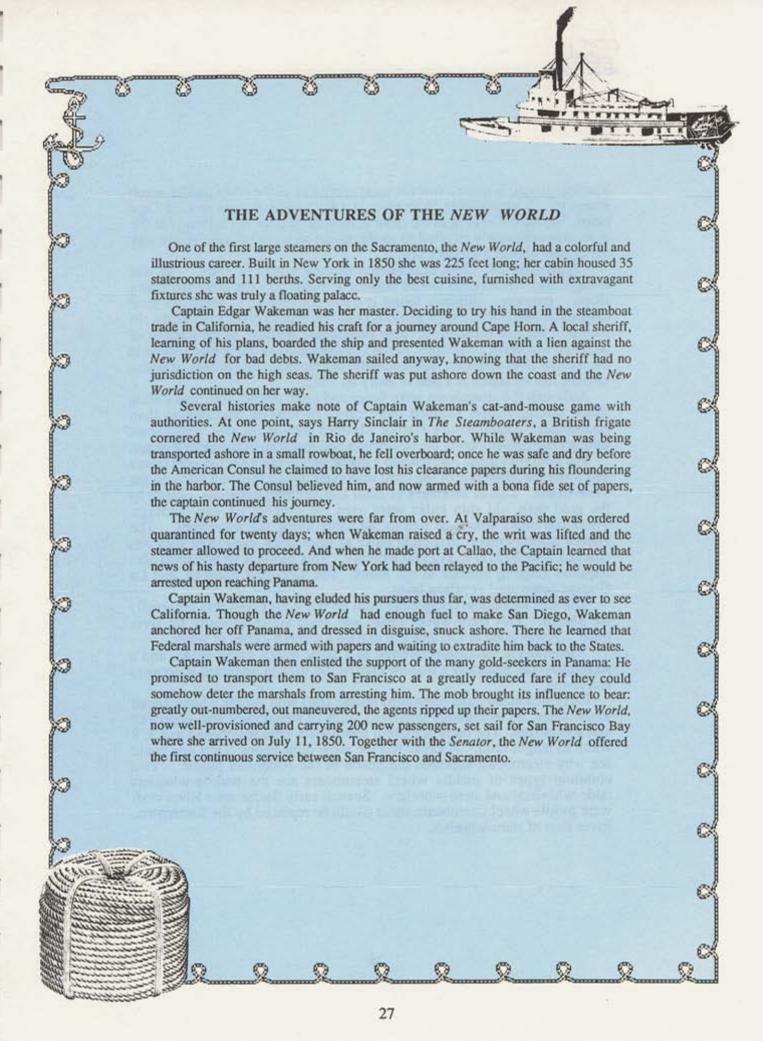
STEAMBOATS

The first steamboat to navigate the Sacramento River was Little Sitka, a forty-ton paddle wheel steamer thirty-seven feet in length which drew only 18 inches of water. The Little Sitka, purchased from the Russians sank in San Francisco Bay in 1848. The engine was sold to miners and the hull refitted into a schooner and renamed the Rainbow.

The next steamer was the Sacramento. It was brought to California aboard a sailing brig and assembled in Sacramento. The Sacramento was to handle trade between San Francisco and Sacramento, but was not large enough for the open waters of San Francisco Bay. Instead it traded between New York of the Pacific and Sacramento.



Figure 2. This photograph shows two old hulks used as storehouses and landings along Sacramento waterfront.





The Steamboat, Senator, was the most profitable of the early paddle wheel steamers. It appeared in November in 1849 after steaming around Cape Horn. The New World was the most luxurious steamer in California at the time, was commonly referred to as the stolen steamer because of the way

the captain eluded a sheriff's sale.

September 28, 1850. Sacramento became a port of entry. It was thought that Sacramento would become a major port for large sea going ships. However, shippers found it more convenient to break up their cargoes in San Francisco so portions could be sent to other river ports. In the fall it became difficult for large steamboats, because of the number of craft and low water conditions, to reach Sacramento let alone turn around in the narrow river channel. Subsequently, Sacramento, due to lack of ocean vessels, lost its status as a port of entry by 1852.

Although the steamboats were faster and more dependable than sailing ships, sailing vessels shipped more cargo in 1851 to Sacramento than steamboats. Sacramento's Harbor Master's Report for that year shows sailing craft outnumbering the steamboats and handling more cargo tonnage.

The gold rush made Sacramento a major supply point for the gold mines and if not the most, one of the most important inland shipping ports on the West Coast. Due to shortages of labor and building materials, caused by the gold rush, old ship hulks were used for storehouses and landings. These old hulks would be tied to the shore along the waterfront. The Harbor Masters report lists eight hulks as store ships, each store ship was charged from \$75.00 to \$125.00 monthly. This shortage of buildings also required keeping inmates in old hulks. The Strafford, Stirling, and La Grange were used as prison brigs.

The first steamboat completely built on the West Coast was reportedly the Shasta. This stern-wheel vessel was designed specifically for river trade. It was rated at 120 tons and drafted a mere 18 inches of water.

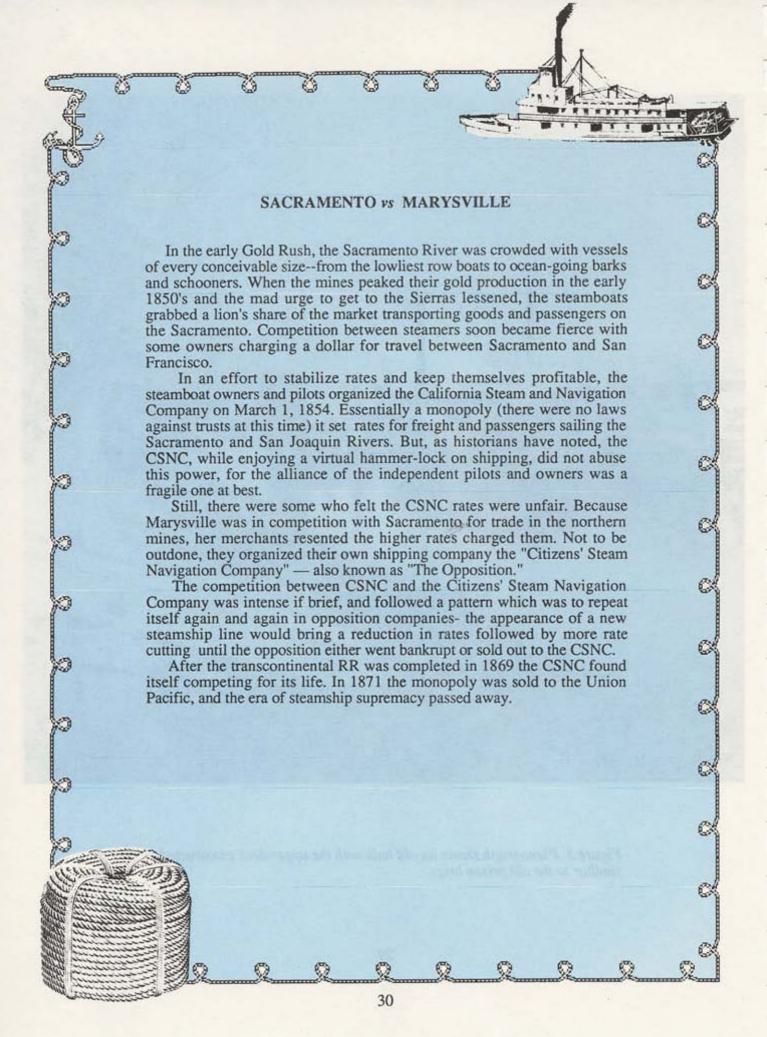
Generally a steamship referred to a large ocean going vessel and a steamboat was generally a shallow draft vessel used in protected waterways

and rivers

Early steamship hulls resembled sailing craft with paddle wheels added to the sides. As technology improved, hulls of steamboats also improved and specialized. The hulls of eastern steamboats were lengthened to a 1: 8 width to length ratio. A kayak has the same dimensions. Thus one could see why steamboats captured the hearts of the American public. Two common types of paddle wheel steamboats are the paddle-wheelers (side-wheelers) and stern-wheelers. Several early Sacramento River craft were paddle wheel steamboats, these would be replaced by the Sacramento River fleet of stern-wheelers.



Figure 3. Photograph shows an old hulk with the upper deck constructed similiar to the old prison brigs.



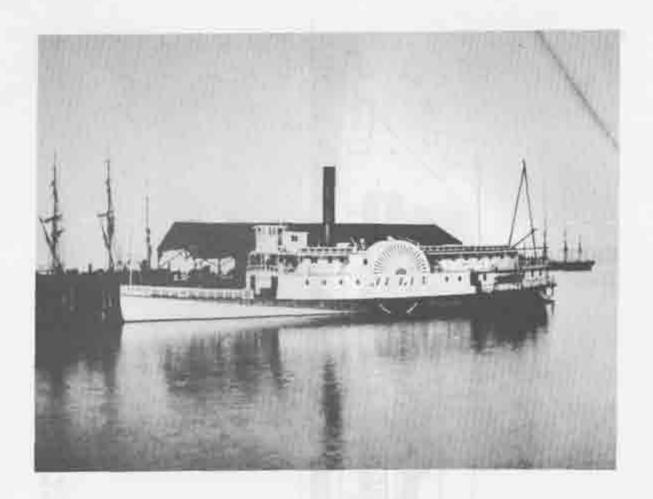


Figure 4. This photograph shows the paddle wheel steamboat Julia. Note the narrow hull at waterline.

Early shipwrights designed paddle wheels on the side-wheelers to be situated at a point between the crest of the wake from the bow and the low point. Thus the paddle wheels were placed at a location most efficient for propulsion even in rough swelling ocean waters. The paddle-wheeler when in shallow water would purportedly skip or loose power. The large ocean going vessels were mostly paddle wheel steamships with deep hulls. River going paddle wheel steamboats were shallow draft, making them very susceptible to the wind forces.

The stern-wheel steamboat, as the name applies, had its paddle at the stern and was well adapted for river travel in shallow water. Stern-wheel steamboats had the distinctive problem of keeping the paddle wheel in the proper location in rough swells of the open ocean waters. When the ship would reach the crest of the swell the paddle wheel would leave the water and at the bottom the paddle wheel would loose power by lifting water. Typically, craft designed for upper river travel in California were narrow, shallow draft stern-wheelers.

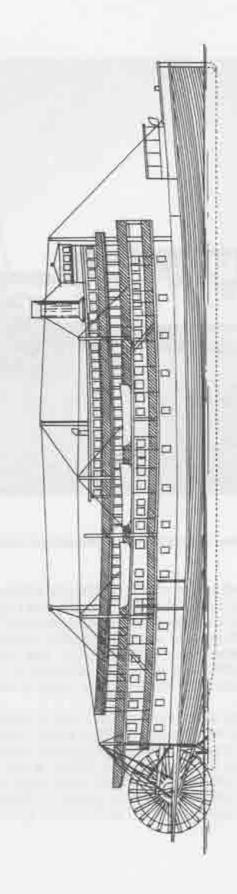


Figure 5. A drawing showing the profile of a typical stern-wheel steamboat built on the west coast for river trade.

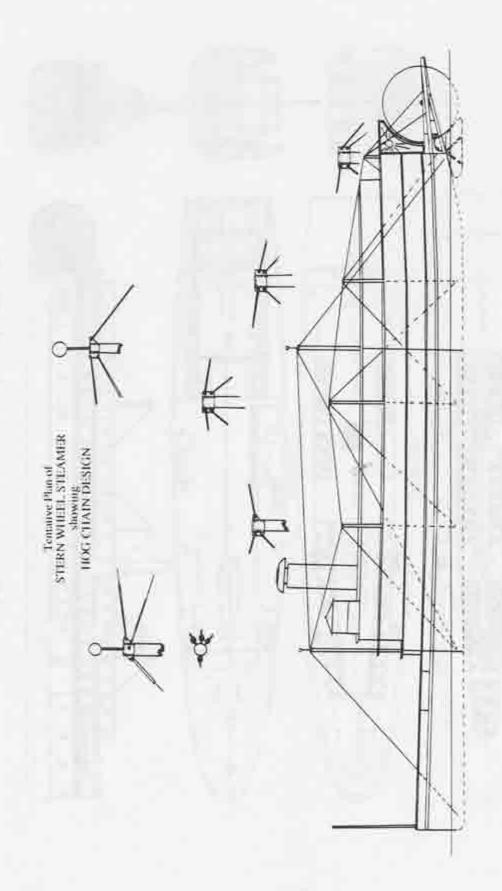


Figure 6. Hogging chain and mast plan, showing their placement on a stern-wheel steamboat.

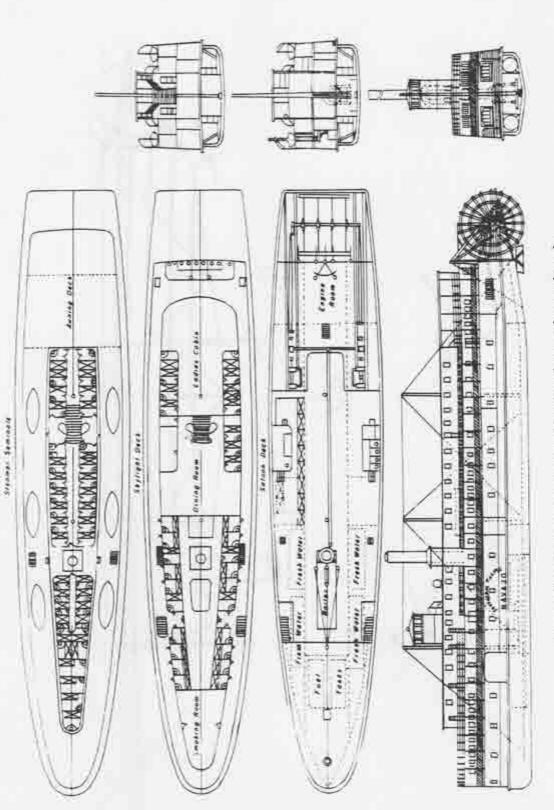
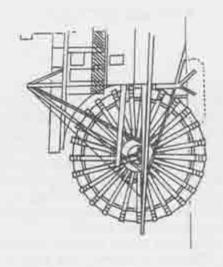
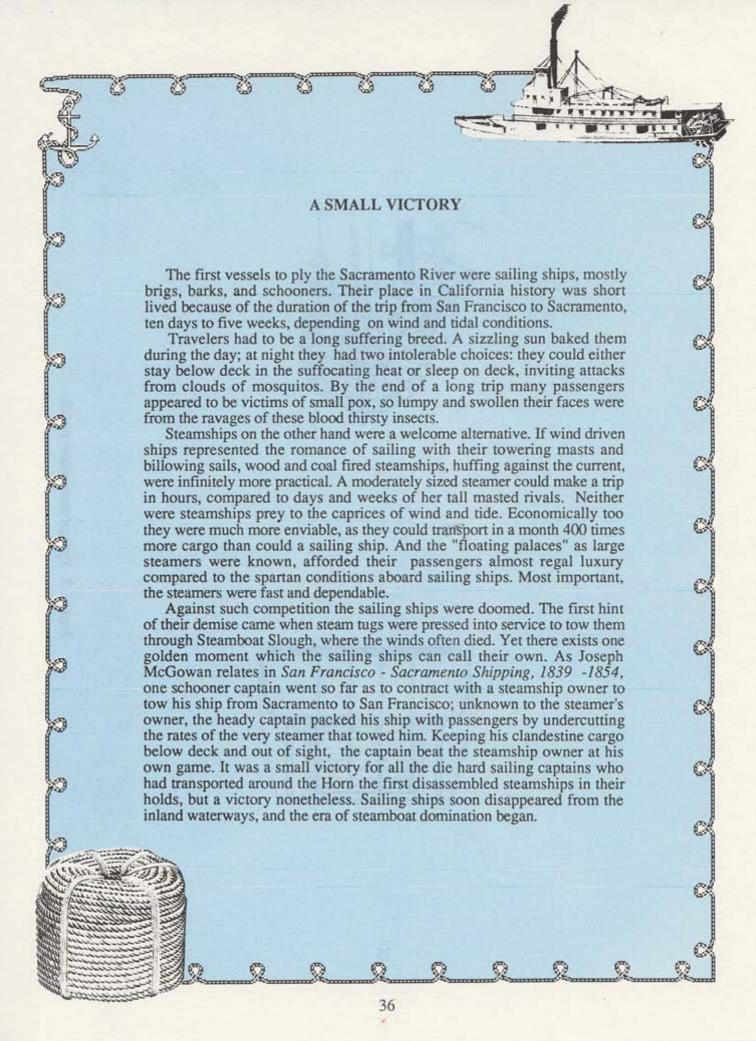


Figure 7. Plans of a later sternwheel steamboat to be used on the Sacramento River.









Two common types of paddle wheels were the radial and feathering style. The radial is the type generally used by stern-wheelers and many paddle-wheelers the floats are connected directly to arms radiating from the paddle shaft. Floats are the boards attached to the paddle wheel which push the craft through the water. Feathering paddle wheels are designed to keep the submerged floats perpendicular to the water surface, thus eliminating drag on the paddle as it enters and exits the water.

The hulls of later craft were built by the same methods used on railroad truss bridges. In fact, the trussing of steamboat hulls was reportedly derived from those very methods used by the railroads. Trussed hulls, referred to as hog framing, enabled the shipwrights to build large flat river vessels drafting 18 or less inches of water. The Latona, Eureka, James Blair, Maria and Pet were light draft river steamers. The Pet, 78 feet long

and rated at 75 tons, drew only 10 inches of water.

Hogging and sagging are two types of strains which adversly affected the flat trussed hulls of later steamboats. Hogging is where the ends of a ship drop down. Sagging is where the middle drops down. The trussed hull of a river steamer was very susceptible to these types of strain. To compensate, a system of poles or hog masts were placed in areas where the most strain would occur. From the hog mast, cables or chains would run down to the hull of the ship. These cables, referred to as hog chains, could be tightened or loosened thus compensating for the effects of hogging and sagging. The tow line would then be attached to a hogging post which was situated well above the paddle wheel.

The boiler's function was to convert water into the steam used to drive the engine. Early boilers were merely water chambers heated from the bottom. Due to the small heating surface they were found to be inefficient. Tubes were then used to increase the heating surface. The water tube boiler is where water tubes are exposed and run directly through the fire box. The fire tube boiler is where tubes from the fire box run through the water chamber and then out the stack. The fire box boiler was most commonly used on steamboats. Early boilers were made from domestic wrought iron and riveted together. Although domestic wrought iron was inferior to imported wrought iron, it was less expensive, therefore, extensively used by early steamboat builders. Copper was occasionally used to build boilers. Due to their large size, boilers had to be heated slowly; once fired, they would not be shut down until the end of the trip.

Boiler explosions were the most tragic of the steamboat accidents. When the boiler exploded, those passengers not killed by the flying debris would be burned by the steam. The following list of steamboats had their boilers explode: Washoe, Pearl, Belle, Yosemite, Fawn, Dana, McClelland, and the Page. When the Washoe exploded, 103 lifes were lost, 11 unaccounted for were presumed drowned, 80 others injured, 3 of which would die later. Due to bad publicity, a steamboat which blew up usually changed its name

after repairs. Others like the Belle were totally destroyed.



Figure 9. The Neponste II was the last of the trading vessels which stopped at ranches and farms along the Sacramento River trading directly with farmers. Note the chickens and pigs along the side of the steamer.

The early paddle wheel vessels operating in sheltered waterways did not require portals. Instead, steamboaters preferred large windows. Due to the immense size of the boilers and engines, the steamboats' superstructure had to be tall enabling the builder to place many large windows throughout the entire ship. The steamer usually painted white, along with the many large windows, created a large airy looking vessel.



When passenger travel was reduced, many steamboats were converted into steam barges. These vessels transported goods from ranches and farms along the river. There were many old steamers whose engines and boilers were removed and converted into cargo barges. California steamboat operators, unlike their counterparts on the Mississippi River, towed the barges. The Sacramento Bridge was the cause of many accidents, especially barges loaded with grain and/or wood. Apparently the current would drive the barge against the bridge, sinking the vessel or knocking off portions of deck cargo.

During the Gold Rush period the steamship Senator had made a profit of \$60,000.00 in one month. Rates from San Francisco to Sacramento were \$30.00 and higher depending if a passenger wanted a berth or meal. During this time period the number of steamboats increased proportionally as fast as the population. In 1852 the amount of placer gold reached a peak. From this time on the amount of gold began to decline and so did the amount of supplies needed in the gold fields. The Sacramento Directory of 1853-54 lists the following four companies and individual steamboats under

the title:

Inland Steam Navigation

Independent Line --- Steamer Antelope, Capt. W. E. Bushnell, landing Storeship Antelope, foot of K Street.

Merchants' Line--- Steamers J Braggon, Capt. T. W. Lyes: Canunche, Capt. George R. Barclay; Urilda, Capt. Thos R. Hope; landing Storeships Coosa and Jovin Guipuzcoana, foot of J Street.

People's Line--- Steamers Senator, Capt. Saml. Seymour, New World.
Capt. Wood Hutchins; landing Storeship Eliza, foot of K Street.

Union Line--- Confidence, Capt. Wm. Clark; Wilson G. Hunt, Capt. E. C. Poole; landing Storeship Globe, foot of L Street. Run regularly between Sacramento and San Francisco.

Merchants' Line -- Excepting when the stage of water in the Feather River is too low--run regularly between San Francisco and Marysville, stopping at Sacramento and Marysville.

The Orient, Shasta, Fashion, Capt. Sutter, San Jose, Ranger, etc., run regularly between Sucramento and Colusa, and the upper towns on the Socramento River.

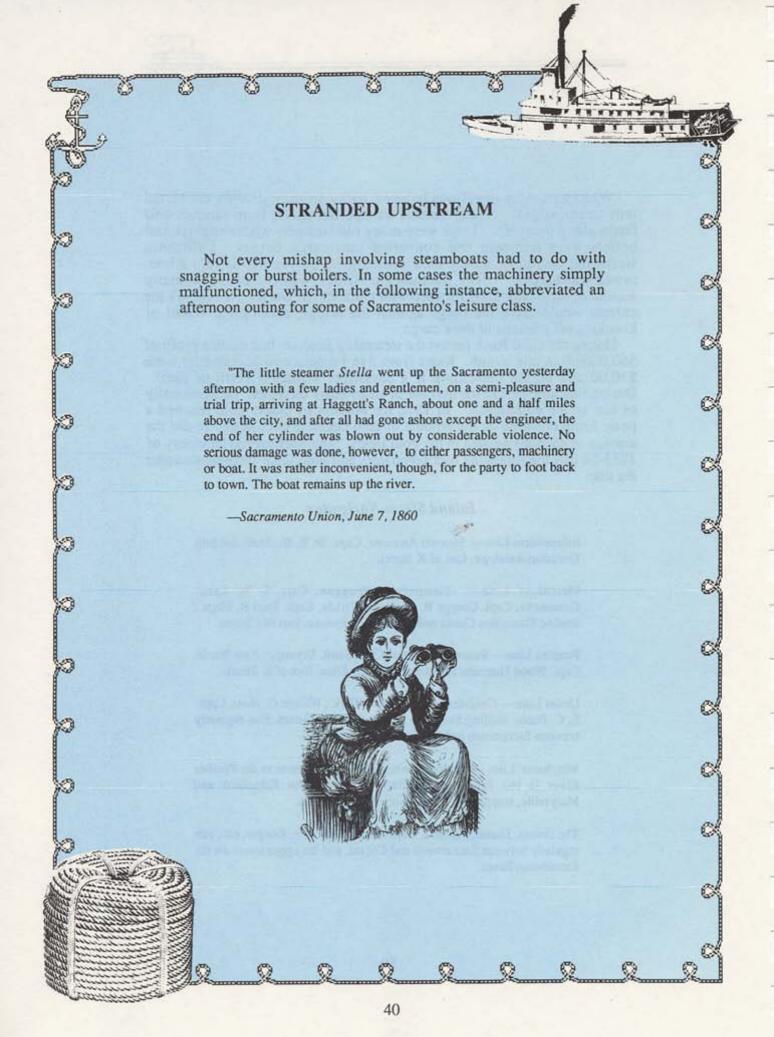




Figure 10. Photograph of the Meadowlark was taken in 1889 and shows a group of adventurer's out for a day cruise.

Due to increases in competition, steamboat operators saw their profits falling. To counter this trend, inland steamboat operators met in San Francisco and formed the California Steam Navigation Company. This company was founded with \$2,500,000 dollars capital. Each steamship owner received one share of stock for each \$1000.00 dollars based upon the value of their boat. Thus, inland navigation was temporarily monopolized.

Merchants of Marysville found they could not be competitive with Sacramento due to the high cost of freight. Formed Citizens Steam Navigation Company, referred to as the Opposition Line and purchased the steamboat Enterprise and later the Queen City. The price wars started all over. The Opposition Line soon found itself having financial problems and was forced into a trade agreement with the California Steam Navigation Company, which leased control of the Opposition's ships. In 1869 the California Steam Navigation Company was purchased by the Central Pacific Railroad, placing valley transportation under the control of one company and eliminating competition. In 1908 there were eleven companies operating on the Sacramento River. By March of 1932 they had merged into River Lines Incorporated.

Not all the steamboat were large commercial vessels. Some were small pleasure craft. The Bessie and the Meadowlark were two such boats. The Meadowlark was built by Augustus Bidwell of Oroville.



Figure 11. This Photograph shows the Sacramento Fleet burning on the August night which forever changed the Sacramento waterfront and steamboating on the river.

On August 28, 1932 a large portion of the Sacramento fleet, while docked on the Yolo side of the river, caught fire. Flames jumped from ship to ship destroying the Flora, Dover, Red Bluff, Colusa, San Joaquin 1, San Joaquin 2, San Jose, Valletta, Sacramento, and Jacinto, forever changing steamboating on the Sacramento River. The last steamboats used on the river were the Delta King and Delta Queen. In 1941 the military leased both ships for transporting troops in San Fransico Bay. After the war they were returned to civilian duty. The Delta Queen is still in use on the Mississippi River, the Delta King is presently located at the Old Sacramento Waterfront, where it is presently being rebuilt.



Figure 12. Aerial Photograph taken in 1922, showing the busy Sacramento waterfront.

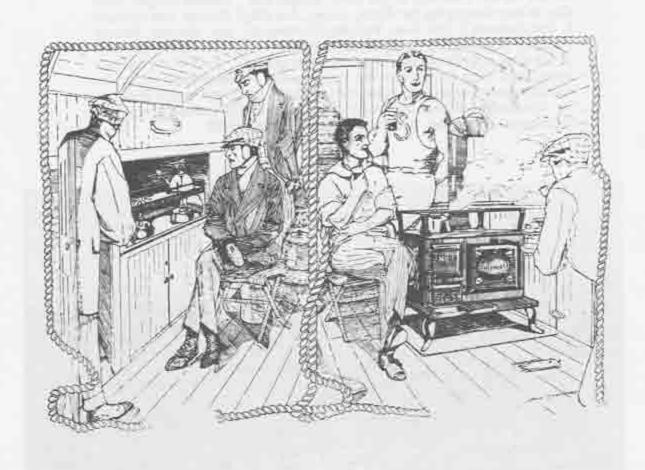


Figure 13. Life on the Riverboat.



SUNKEN VESSEL LIST

The vessels listed on the following pages all sunk in the project area, but we don't know whether they were salvaged, or whether their remains rest in the riverbed. The list was compiled from newspaper articles, books, maps, and other record information by State Lands Commission Boundary staff. One particularly rich source of information was the Sacramento Daily Union microfim collection in the California State Library, Sacramento. The period from 1851 until 1880.

There is a brief description of the vessel and the wreck and sometimes a newspaper account is transcribed. Each vessel is accompanied by a map

that suggests the wreck site.

Early maps show the Sacramento River as having three forks: Easterly fork, being the present Sacramento River; Middle fork, the current Steamboat Slough; and Westerly fork, now Miner or Prospector Slough. Each of the three channels was researched for both submerged and upland features.

There were many boating accidents and explosions, however most ships were recovered and the cargo salvaged. Normally when a ship was sinking the captain would try to beach the craft in shallow water where the cargo and passengers could be off-loaded and the ship repaired. If successful they would continue their journey; if not barges were used to rise the vessel. If a vessel was not worth repairing, as often was the case with older boats, they were merely abandoned.

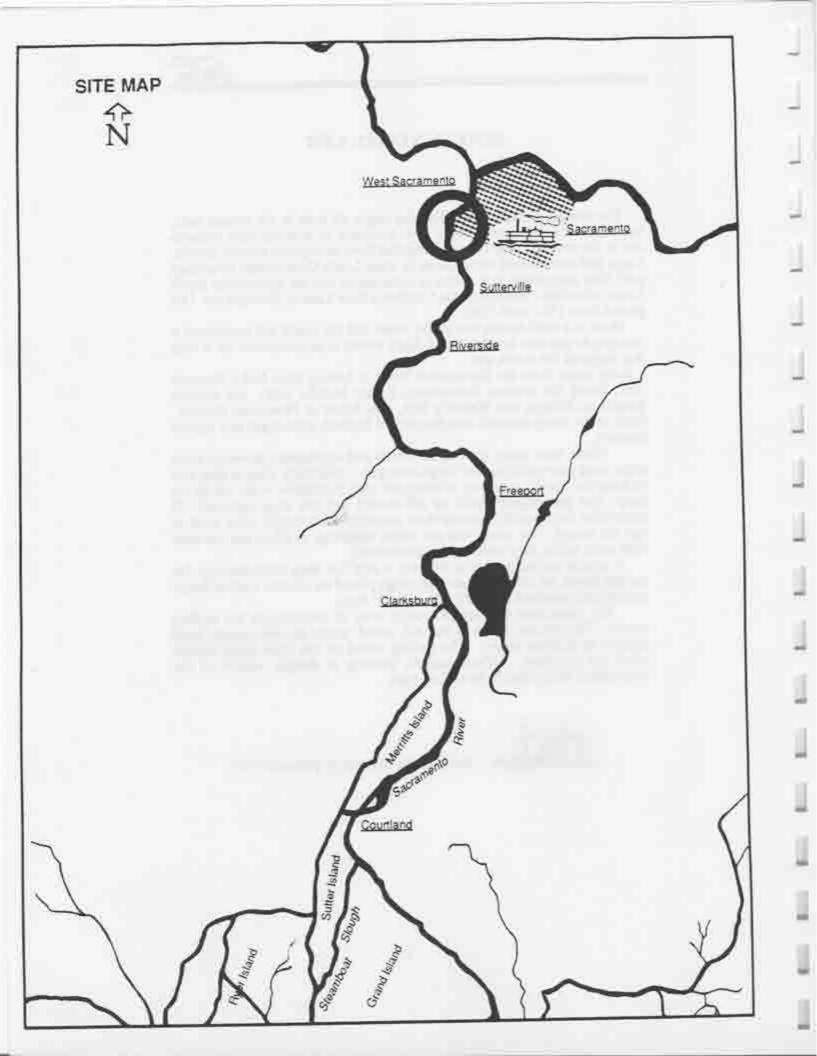
A typical scenario went as follows; a ship hits snag starts sinking, the captain heads for shallow water, the cargo placed on another craft or barge

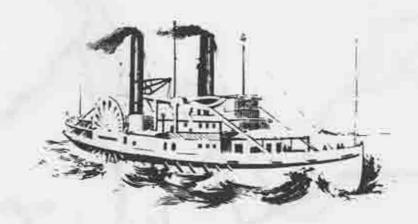
and the ship repaired and back afloat within days.

The steamboat had an advantage over its counterpart the sailing vessel. The steamer when in trouble, could, under its own power, head straight to shallow water. The sailing vessel on the other hand needed wind get to shore. Thus, vessels sinking in deeper waters of the Sacramento River tend to be sailing craft.



Exhibits for illustrative purposes only.

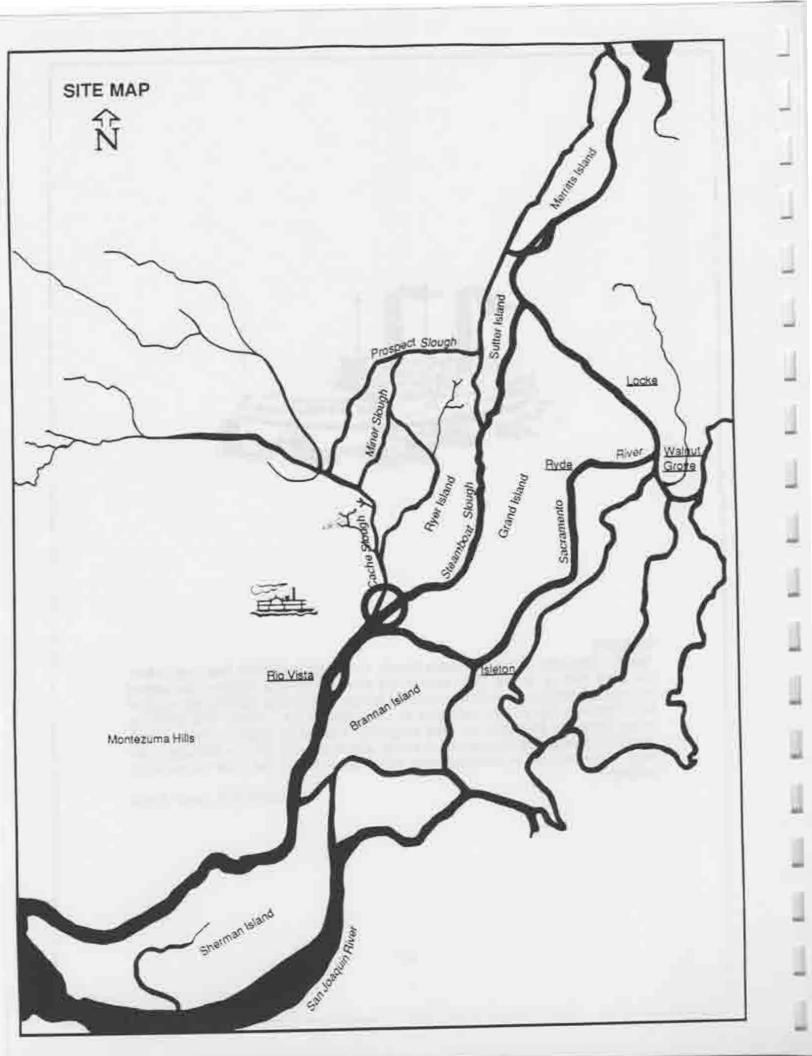


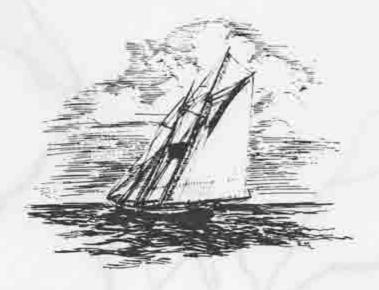


BESSIE

"Sunk.—The little pleasure steamer Bessie, a craft thirty or forty feet long, which has been laid up on the Yolo side of the river for several months, lies almost entirely submerged a few yards above the bridge, and if some effort is not made to raise her soon she will be destroyed by the action of the current. The difficulty arises from the fact that she was originally tied up in shallow water, which gradually receded as the season advanced, and eventually left her sticking in the mud, from which she refused torise when the water in the river increased in volume."

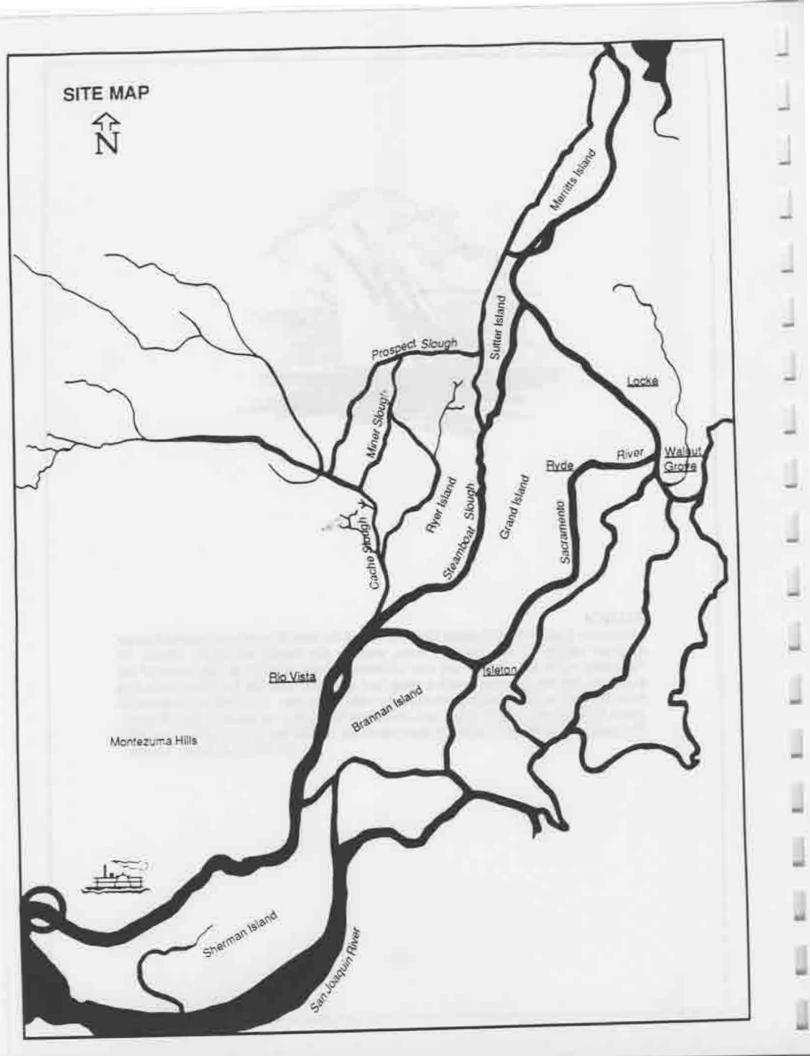
12/27/1869, Sacto. Union

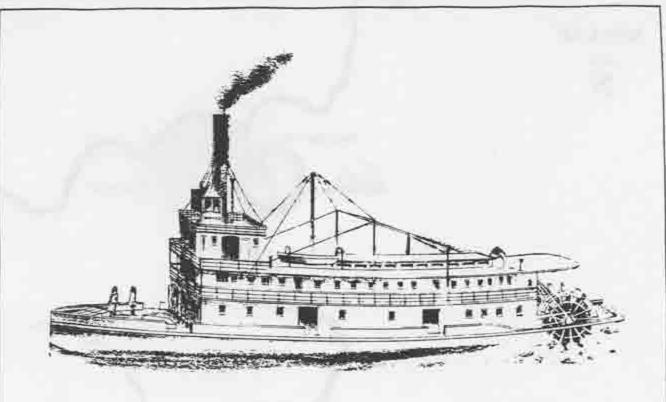




"Schooner Sunk- The schooner Bianca, bound for this city with an assorted cargo of from eighty to one hundred tons, sunk at the mouth of Cache Creek, on Thursday night last. There are two different rumors relative to the cause of the accident- the one that she struck a snag, and the other that she had been hauled up near the bank at night and careenedon the ebb of the tide. The loss will amount to about fifty percent of the cargo, and doubtless fall heavy on some of the shippers. We understand that the cargo has been taken out and forwarded on sailing vessels."

10/30/1854, Sacto. Union.



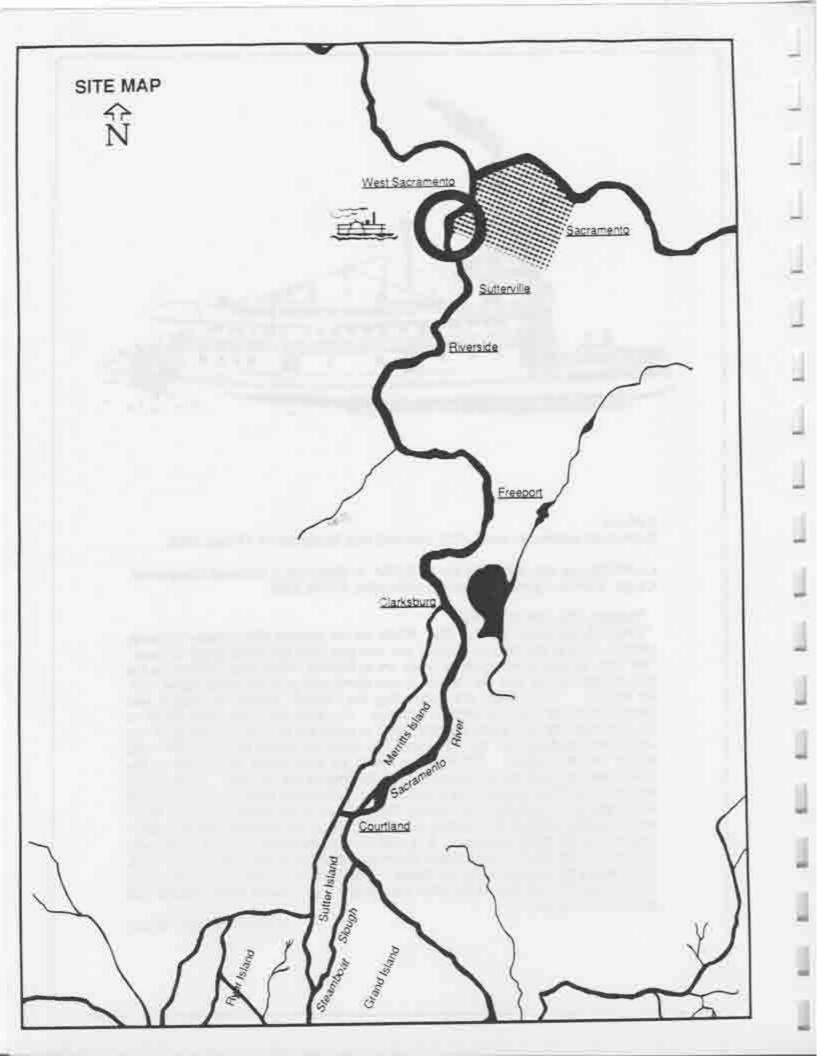


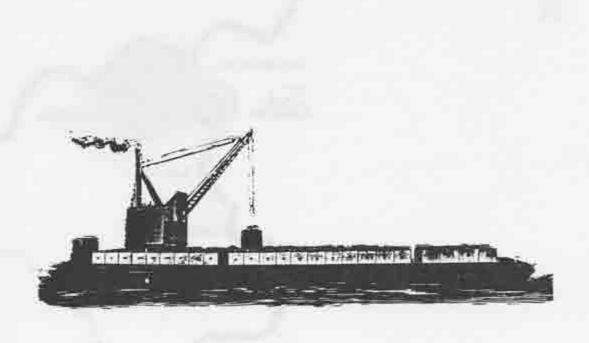
Colusa
Sternwheel steamship; built 1911; wrecked near Broderick on 15 Sept.1932.

CAPITOL ran into and sank the COLUSA to eliminate a business competitor. Cargo: Corn and grain. Sank near Collinsville. 19 Oct. 1868.

Formerly The Star of the West.

"Steam Barge Sunk- Loss of life,- While on her upward trip Monday evening, about 8 o'clock, the steamer Capital ran into and sunk the steam barge Colusa. The facts, as near as we can learn them, are as follows: When near Collinsville the pilot of the Capital saw the Colusa, bound down, and gave the usual signal with the whistle. The Colusa not responding, the Capital backed her engine and turned out of her course to avoid a collision. Just then the Colusa sheared off to the side taken by the capital and attempted to cross her bow, but in doing so was struck near midships on the starboard side, from the effect of which she sank almost instantaneously. Of those on board, all were saved except two of the hands, who are said to have been asleep at the time of the collision. Every effort was made by those on board the Capital to save the entire crew, but in the case of these men unsuccessfully. The Colusa (formerly the wood barge Star of the West) was owned by McNair & Sherman, and at the time of the accident had on board a freight of grain and broom-corn. It is doubtful whether either boat or cargo were insured. At the time of the accident Sherman and another man were at the wheel, there being no regular pilot on board. The owners of the Colusa are very unfortunate, it being two weeks since their barge, while bound down, loaded with grain, was snagged."

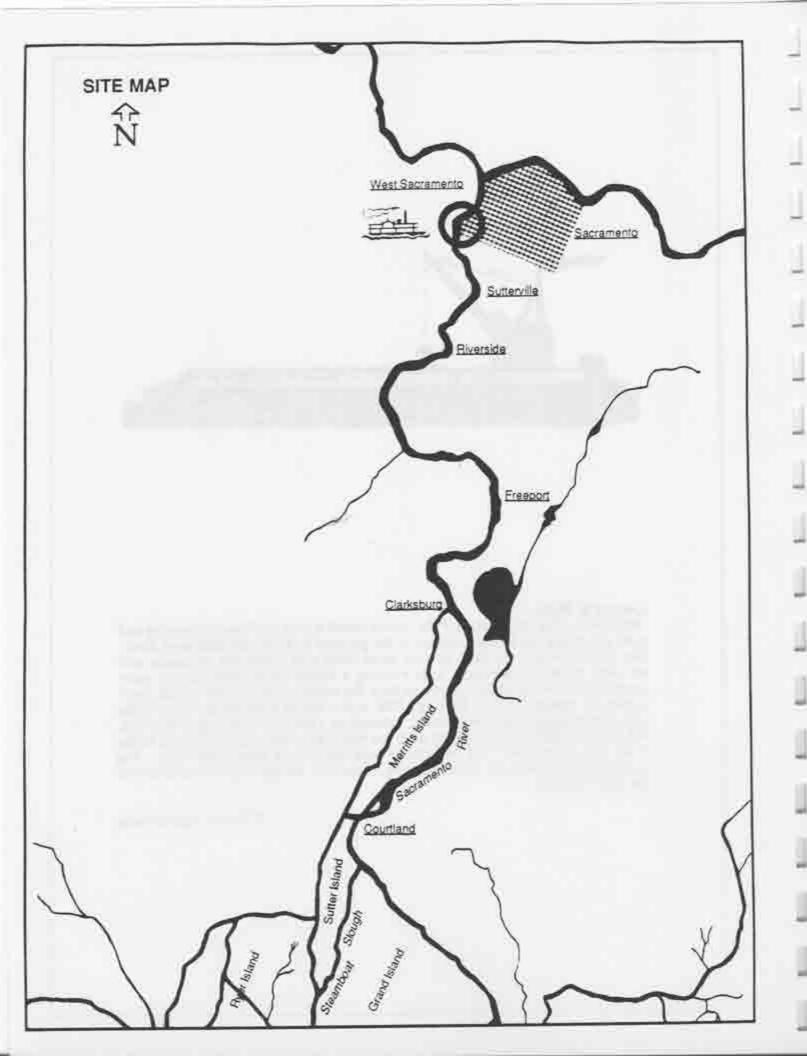


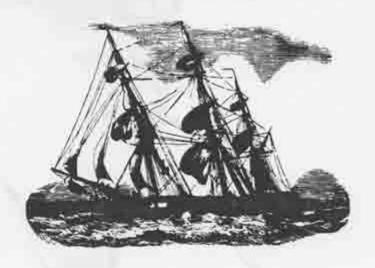


Cooper's Hulk

"Still there - The wood barge, Pike, which struck a snag on Tuesday evening and sunk just below the bridge, remains in the position in which she first went down. Her cargo of wood was taken off, but being filled with water, she, of course, will not float without assistance. Last evening a survey of the river at that point presented the wreck of the old prison brig, the wreck of the Cooper's Hulk, both sunken but partially visible; the barge Pike, in five feet of water but partially visible and another barge loaded with wood, aground on a bar a few rods below the Pike. All of these craft were so located as to aid materially inforcing the channel to the Yolo side of the river, and in forming sand bars on the Sacramento side. The question of removing the old prison brig, especially, should claim the attention of the City Trusstees."

7/1/1864, Sacto Union

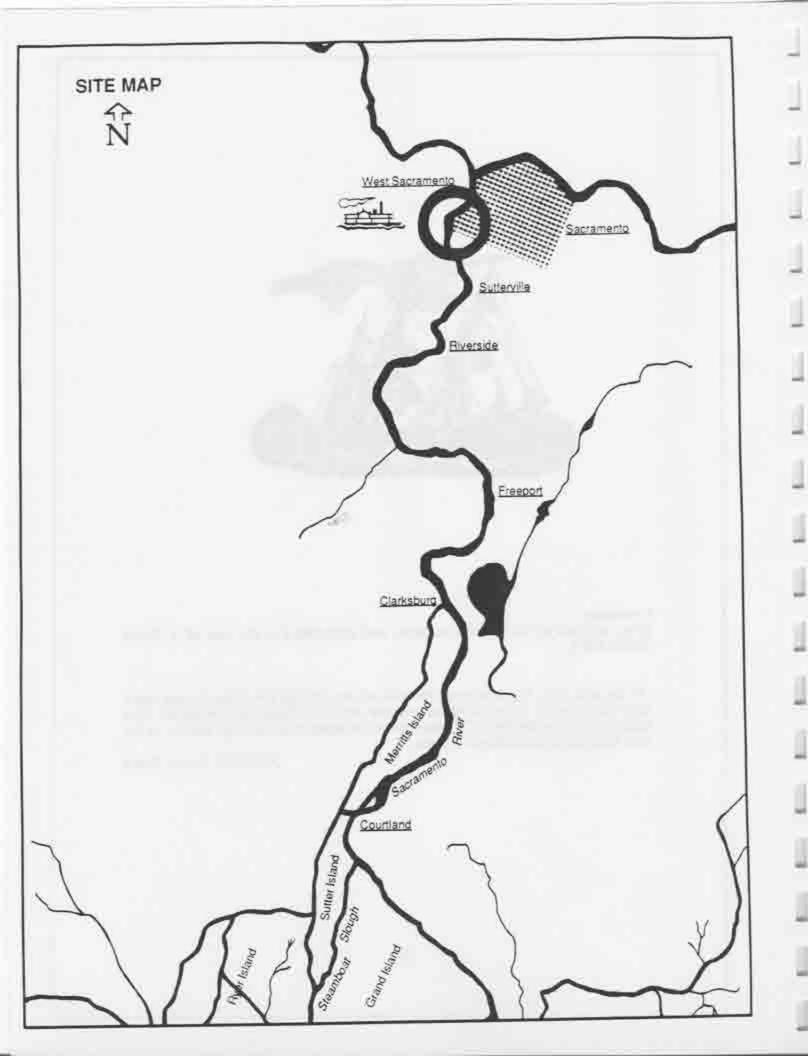


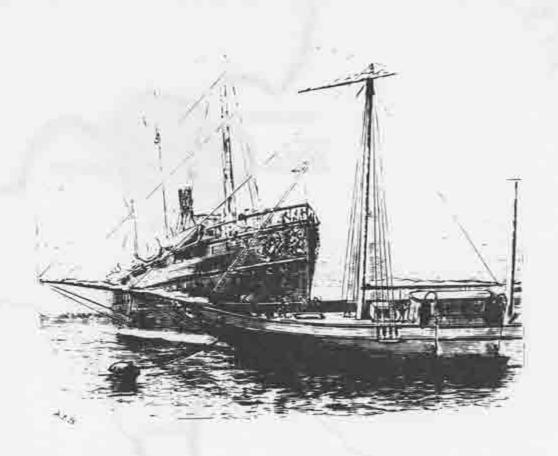


Crescent
Ship; stripped of salvageable material and abandoned at the foot of Y Street 21Mar.1873.

"To be stranded. The owners of the hulk of the old ship Crescent, having taken from her as much of her timber as possible while she floats, have removed what remains of her to the foot of Y Street, there to remain to be left high and dry as the river falls during the summer months."

3/21/1873, Sacto_Union

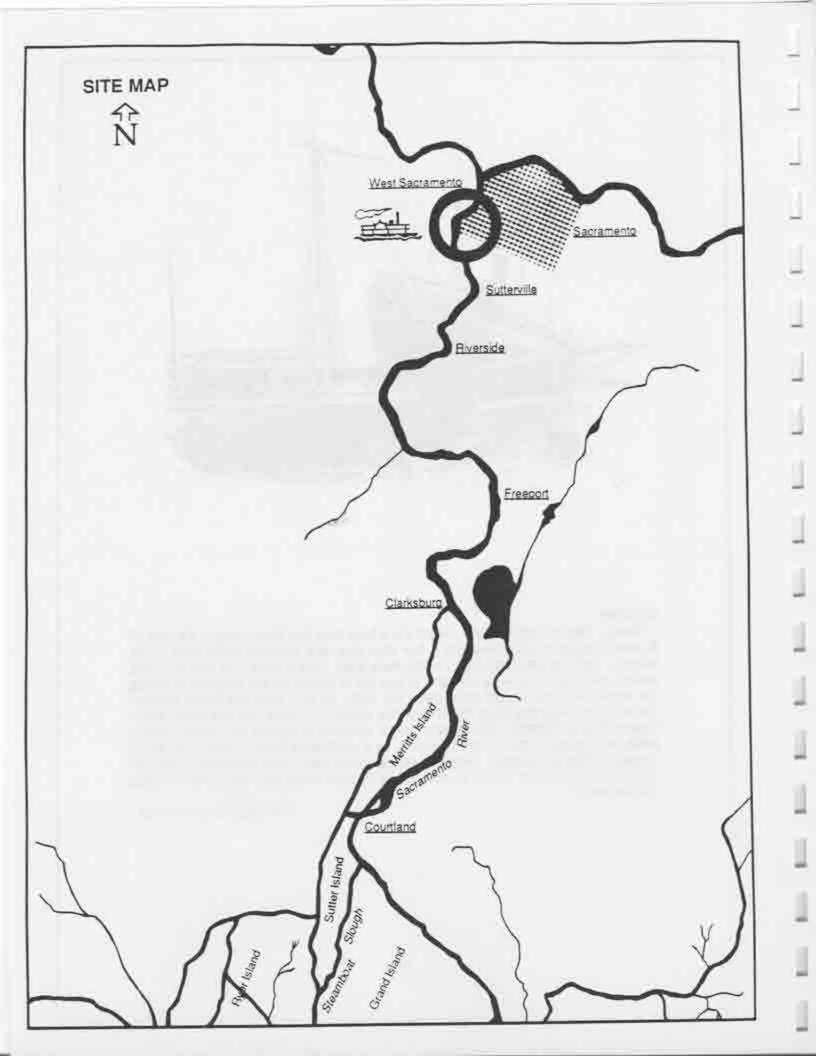


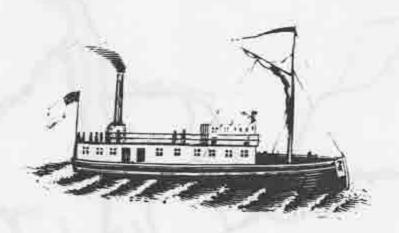


DIMON

"Sunk - The old hulk Dimon, which for a long time has been lying at the foot of R street, began to sink gradually a few days ago, and Tuesday night went to the bottom. She now lies submerged to the main deck. The Dimon was sold to a junk dealer, not long since, who intended to tear her to pieces for the purpose of saving the wood, iron and cooper composing her hull. As it is now, we doubt whether she will have anything done to her until the water shall have reached much lower figures than at present. She should not be allowed to remain any longer than is really necessary in her present position, as a sandbar of large dimensions would speedily form around her. Boys of all ages and sizes were yesterday using her deck as a place from which to dive while in swimming, and declared it a great convenience."

7/30/1868, Sacto. Union

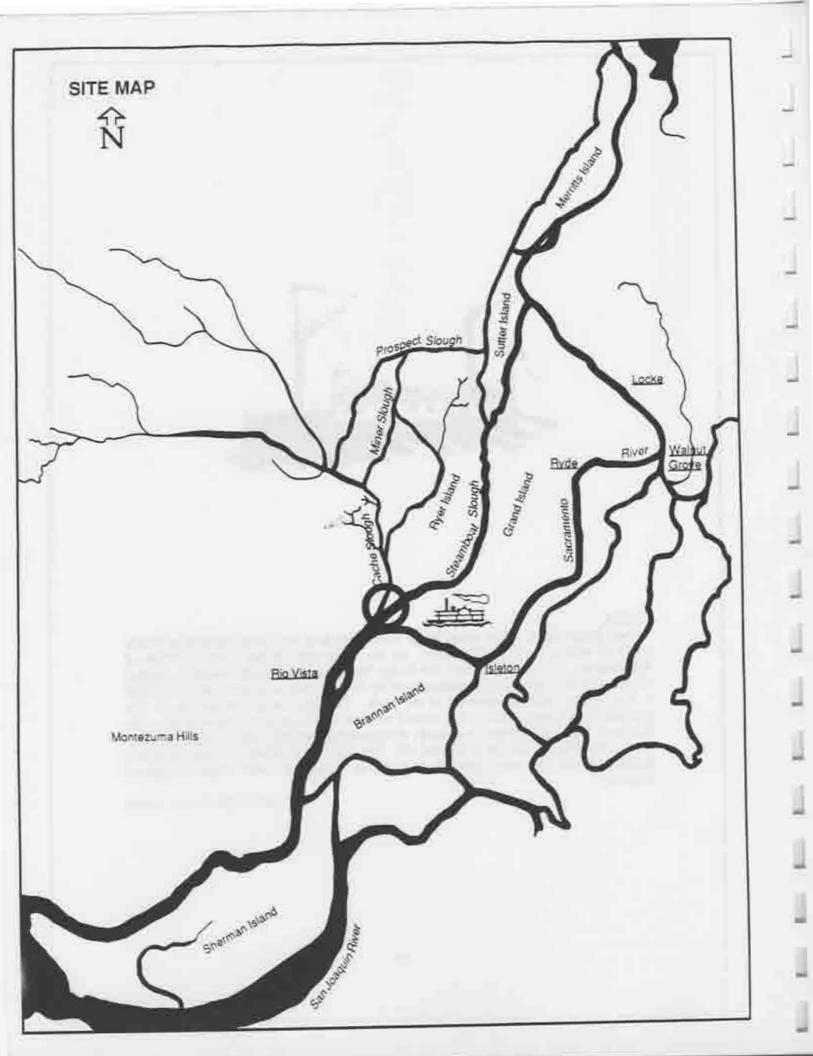


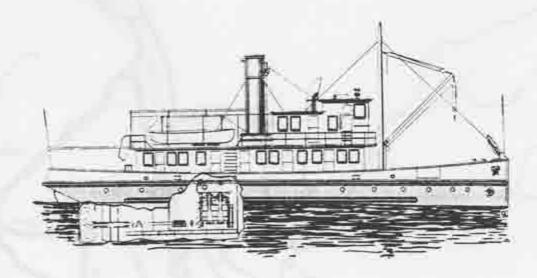


ELIZA

"Wood Barge Sunk. - The wood barge Eliza, freighted with one hundred and fifty cords of wood, sunk on Thursday, on the Yolo side of the river, in front of Washington. In coming through the bridge the Eliza fell into the western channel of the river, and becoming unmanageable by the few men who were on her, floated in among the steamers moored at the bank. Striking the Governor Dana, she injured the steamer slightly and herself to such an extent as to stave in her side. She soon filled with water and sunk, disappearing partially but not entirely from view. A portion of her cargo floated off. The Eliza was owned by Mexican wood dealers. Workmen were engaged yesterday in raising her, with a fair prospect of success."

12/3/1864, Sacto. Union

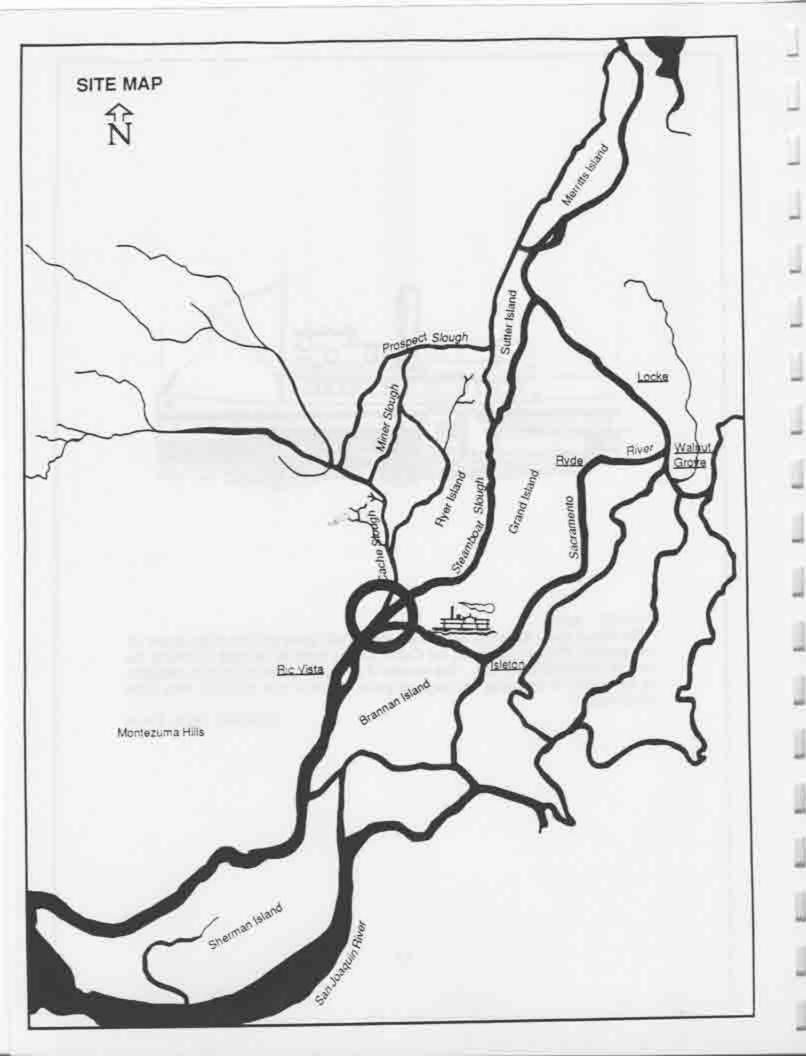


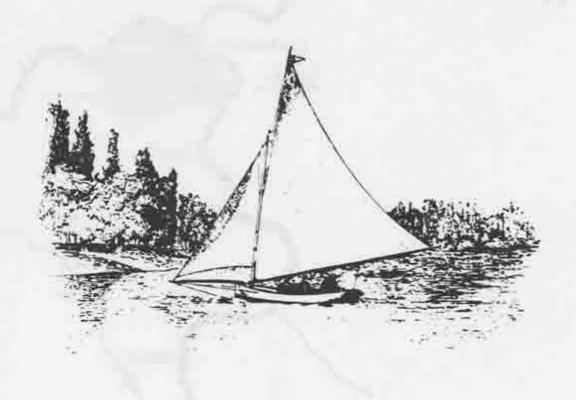


FANNY ANN

"The Fanny Ann.- The large barge Tule Hawk will leave the city today in tow of the steamer Pioneer, destined for Cache Creek, there to be used in raising the sunken propeller Fanny Ann. The owners of the latter vessel have been energetic in the matter of removing her cargo of grain, which is now probably soon to be afloat again."

11/9/1868, Sacto. Union



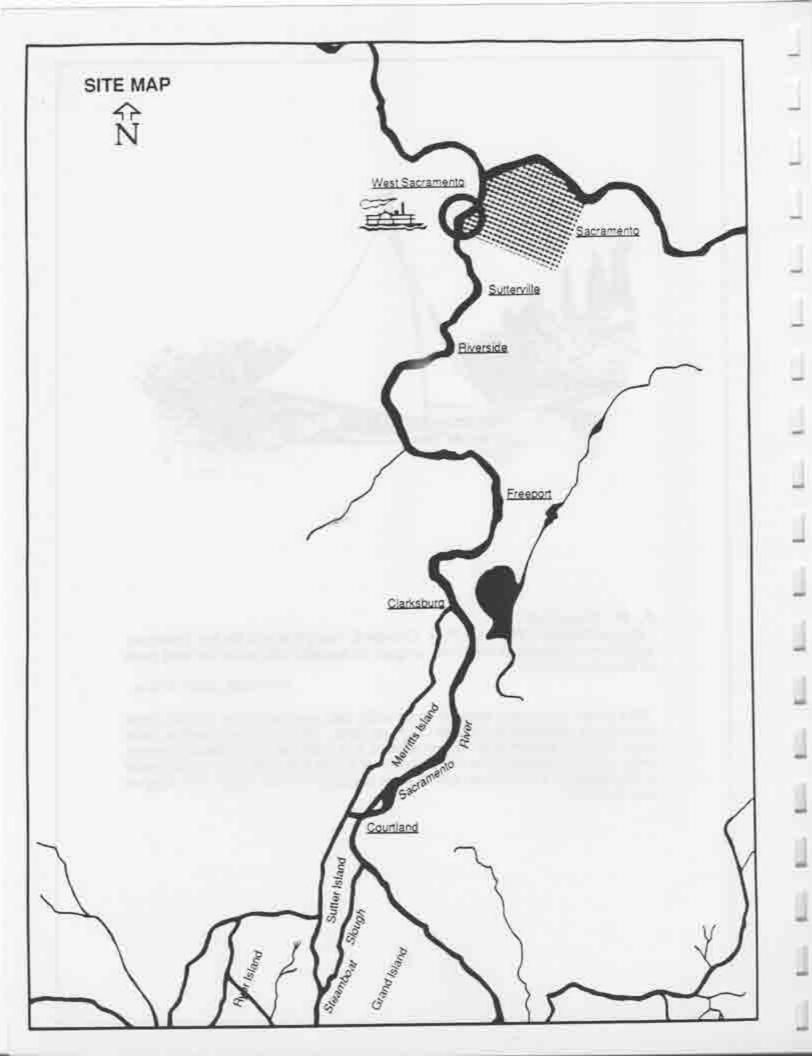


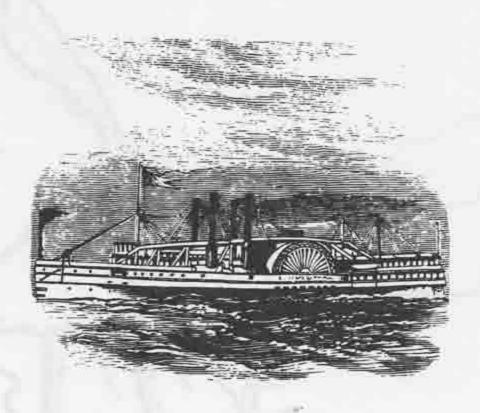
F. W. Grawford

"Marine Disaster - The sloop F. W. Crawford, hence this port for San Francisco, with thirty-six thousand brick, was snagged on Saturday last below the head reach of Steamboat slough."

7/30/1868, Sacto. Union

"This vessel, which was snagged on Saturday last, was owned by Captain Peye, who was in command at the time of the accident. His loss is estimated at about three thousand dollars, and the loss of brick and other cargo is placed at between three and four hundred dollars. The schooner lies in deep water, and in the center of the channel - about sixteen feet of water standing over her decks. The shippers lose the brick."





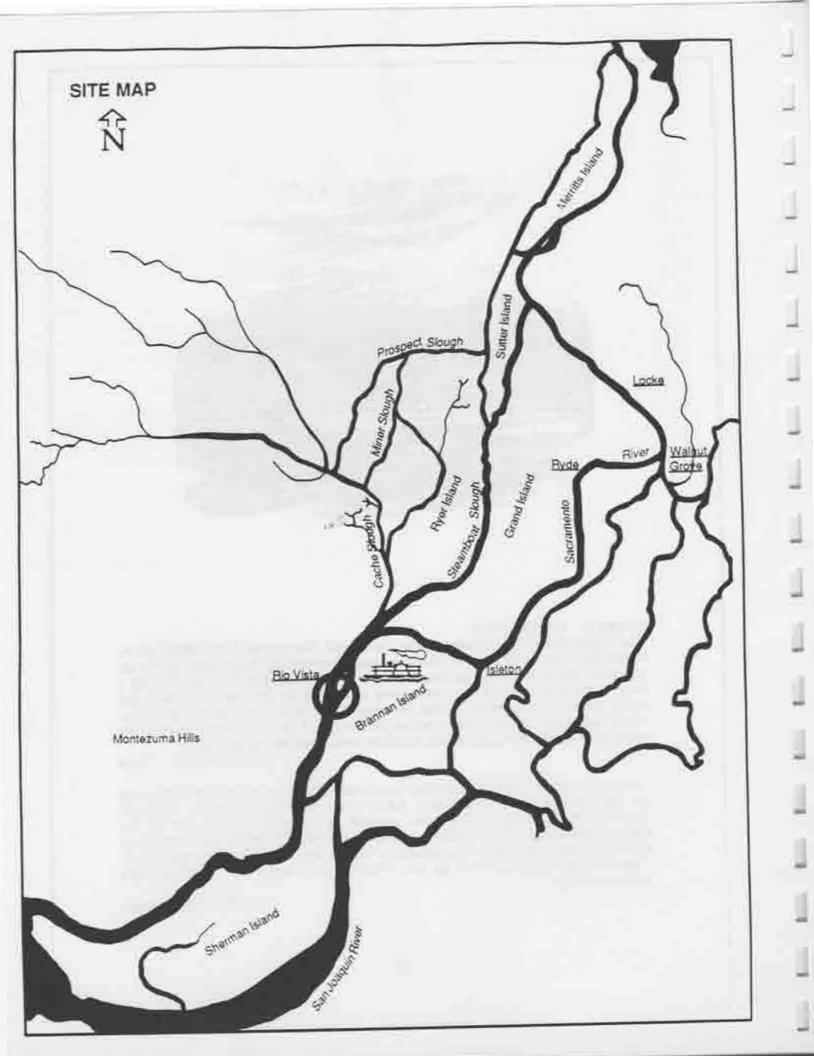
GENERAL REDDINGTON

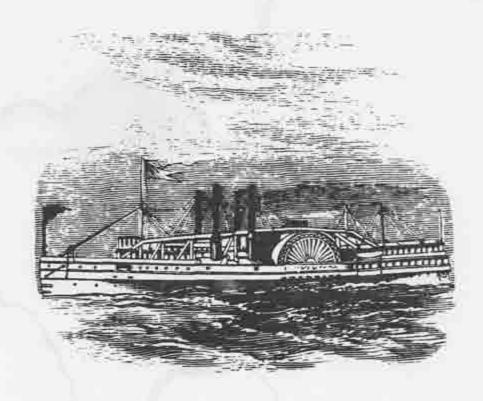
"Last night, about five minutes before ten o'clock, the steamer Gen'l Reddington, belonging to Jos. Arcego, and which is engaged in towing barges and lighters up and down the river, while passing the draw of the Sacramento bridge, having a barge laden with wood in tow, was swung around by the force of the current, and struck the centre pier of the bridge, injuring her to such an extent that she began filling, and sunk a short distance below the bridge. There were several persons on board the steamer at the time of the accident, none of whom were injured."

11/8/1859, Sacto, Union

"Sunken Steamer.- Active operations were commenced yesterday towards raising the steamer General Redington, which sunk on Monday night, opposite Carpenter's Building, having been injured by collision with a pier of the Sacramento bridge. The steamer has been encircled withchains, and spars have been erected and rigged for the purpose of raising her, under the direction of J. A. Crocker, who has undertaken the job. Probably the steamer will be afloat, right side up, to-day."

11/9/1859, Sacto. Union





Helen Hensley
Steamship; towed to the back of Wood Island and abandoned. Boilers, engines, and everything else of value was removed. 12 Mar. 1873.

"The Helen Hensley.- The steamer Gem with a barge and force of men, will leave for the lower Sacramento to remove from the old steamer Helen Hensley, now lying back of Wood Island, her broilers, engines, doors, windows and everything valuable. The old craft sprung leak several months ago, and, as she was not deemed worth repairing, was hauled to a flat and allowed to remain there full of water."

3/12/1873, Sacto, Union

"The Hensley.- The steamer Gem, towing a barge, left yesterday for the lower Sacramento to remove from the old steamer Helen Hensley, lying back of Wood Island, the boilers and engines."

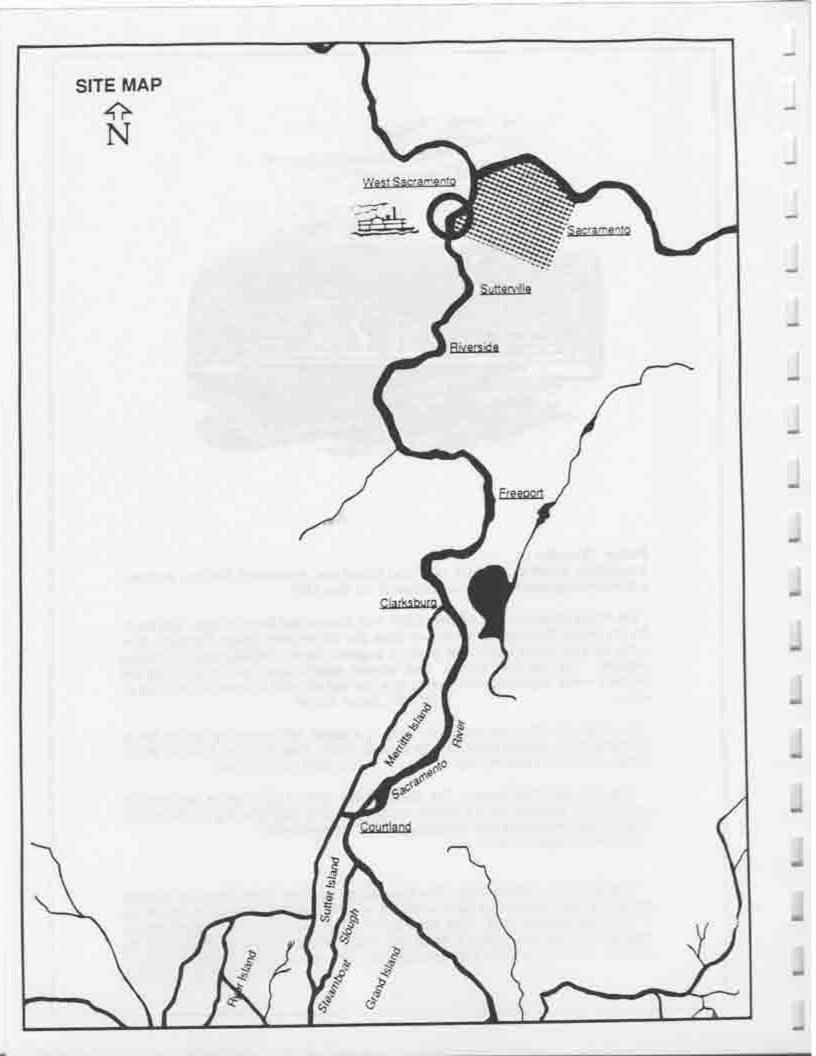
3/13/1873, Sacto. Union

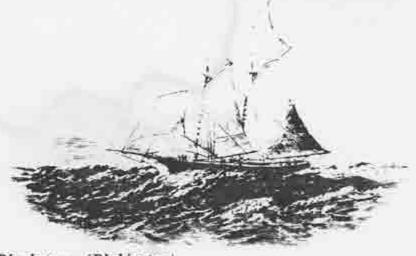
"The Hensley's Machinery.- The steamer Gem arrived night before last from the wreck of the steamer Helen Hensley, lying at Wood Island, bringing up the boilers, engines and everything else belonging to that venerable craft."

3/17/1873, Sacto. Union

"The Hensley's Machinery.- The four boilers recently taken from the steamer Helen Hensley, which has been wrecked, will be stored on the Yolo side of the river in the steamer yard. They were built in 1860, and were the second set the steamer had. Her machinery is to be sent to the railroad shops and broken up for old iron. It was built in St. Louis twenty years ago and sent out "around the Horn".

3/19/1873, Sacto, Union





Kate Blackstone (Blakinston)
Schooner; capsized at the foot of Y Street, Sacramento, within 100 feet of the east bank. 15 June 1865.

"Schooner Sunk.-Two Men Drowned.- At about four o'clock yesterday afternoon the schooner Kate Blackstone, from San Francisco when in sight of the levee with a cargo of general merchandise, capsized and sunk. Of the three men on board at the time of the accident, two were drowned and one was saved. The schooner was coming up to the city under a strong wind and a full sail. When opposite Y Street she was observed to keel over until the masts touched the water. She then righted, but the reaction carried her over on the other side, when she sunk with her masts down stream. A number of boats at once put out from the levee to her relief, but on account of the wind and rough water some time elapsed before they reached her. Three men were seen afloat, but before assistance reached them two of the number sunk and were drowned. Captain Ernst Gerken, master of the schooner clung to some portion of the cargo and drifted a half mile down stream, when he was overtaken and rescued. When he arrived at the house of Mr. Smith, on Front Street, he was so far chilled and exhausted as to be unable to speak. The two men who were drowned were known by the name of Harry, a native of Denmark, aged 22, and Fred, a native of Hamburg, aged 16 years. The Captain states as the vessel was sinking the two men could not swim and clung to him until all three were near drowning. The schooner lies within a hundred feet of the east bank of the river. She can probably be raised."

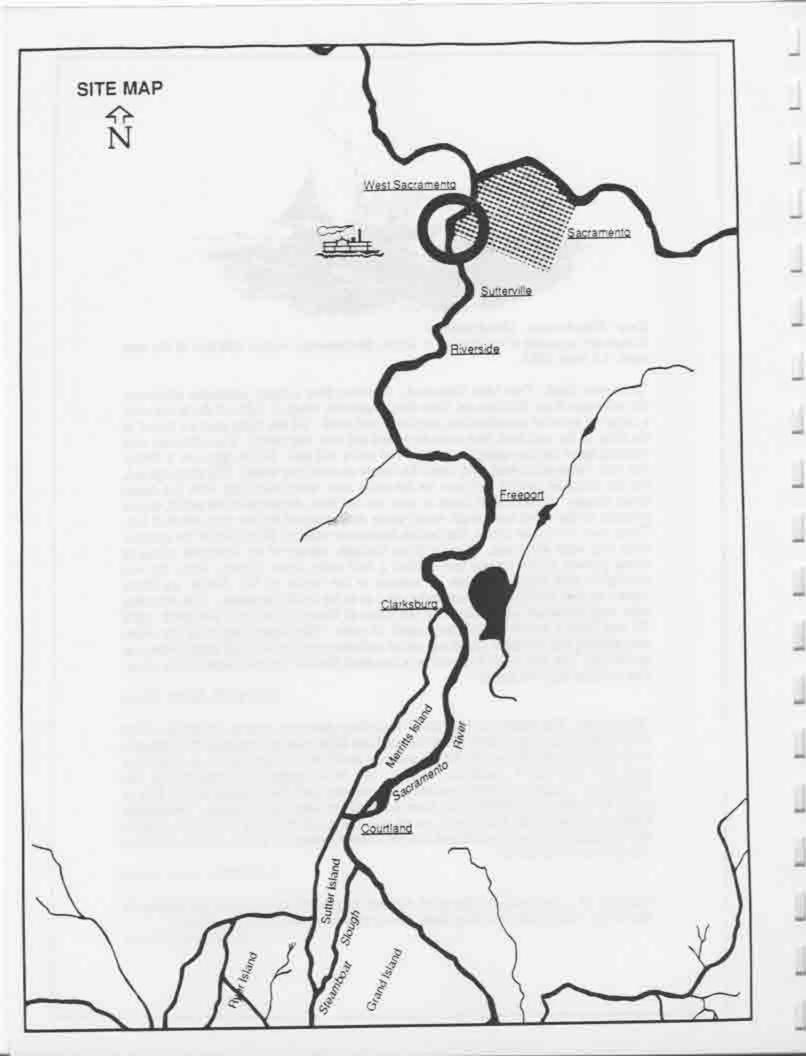
6/16/1865, Sacto. Union

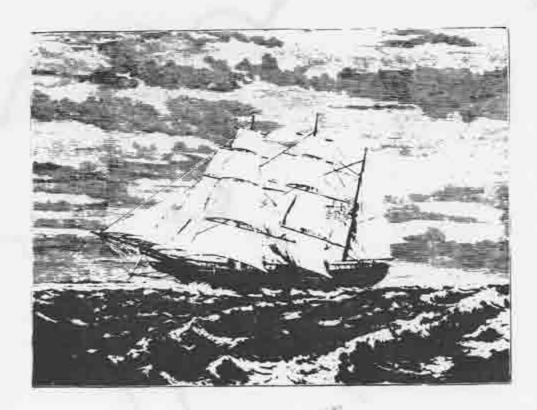
"Cessation.- The schooner Harriet K. and sloop America ceased, yesterday, from their labors in trying to raise the schooner Kate Blakiston, not because they thought the job impracticable but for the reason that under the circumstances, it would not pay. The Harriet K, and the America are now loaded with freight for San Francisco. Captain Gerken, yesterday afternoon, took the steamer for the Bay in order to make arrangements to float his craft as soon as possible. Two-thirds interest in the Kate Blakiston are in the hands of the San Francisco Public Administrator, and we understand that he is not disposed to go to any great expense in order to set her afloat."

6/20/1865, Sacto, Union

"Saved.- A steam engine designed for hoisting purposes, owned by Becker & Hamilton, was raised yesterday from the lumber schooner Kate Blackiston."

6/22/1865, Sacto, Union

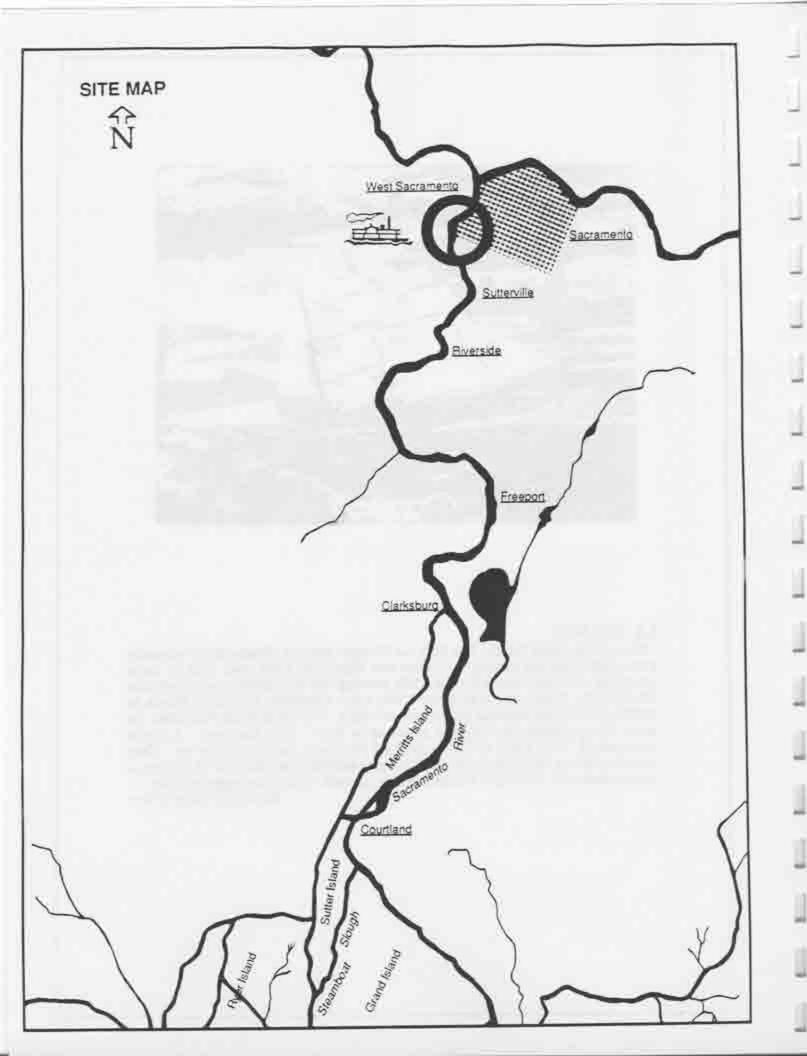


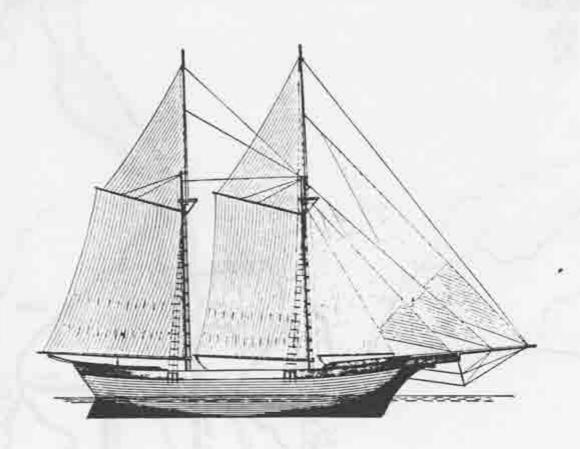


LA GRANGE

"Prison Brig-Sold Again-The bark La Grange-the old "Prison Brig"-recently purchased from the county by Talbot and Harris for \$205, was sold by them yesterday to Yong Chee & Co. for \$325, proving that they made a very profitable investment. Possession was given about noon yesterday, Constable Harris in person placing the fortunate possessors on board. In a few minutes thereafter, the news being abroad, the Chinese swarmed in the vicinity like bees. It is the intention of Yong Chee & Co. to strip off her copper and break her up. They intend to have a team constantly at the levee to transport the timber to Chinadom as fast as taken out. An attack will be made on the hulk without unnecessary delay."

12/24/1859, Sacto Union

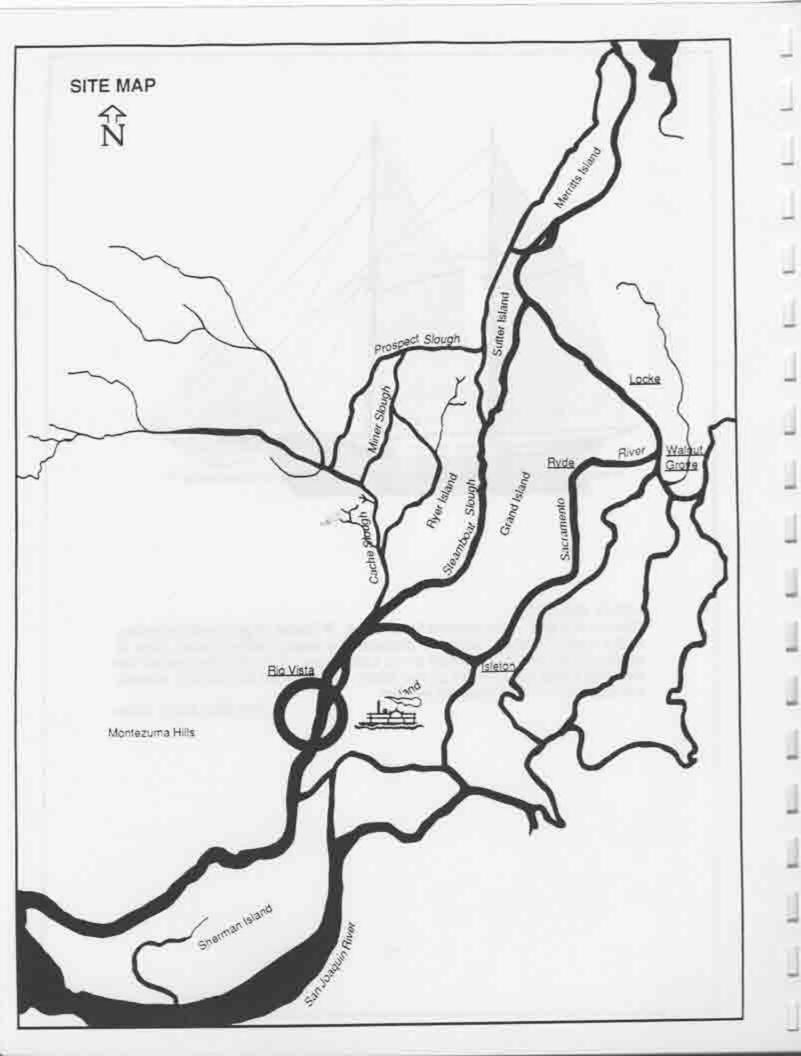


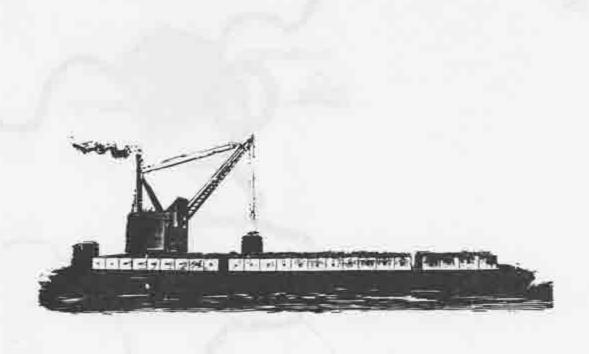


LONG ISLAND

"Marine Accident. - The schooner Long Island, Williston, in getting off yesterday, with a load of cobbles, under the pressure of a strong northerly wind, came in collision with the old submerged power hulk, Ninus. It is currently reported that the Long Island sustained the greater injury. The accident may be very properly attributed to a stress of wind and weather.

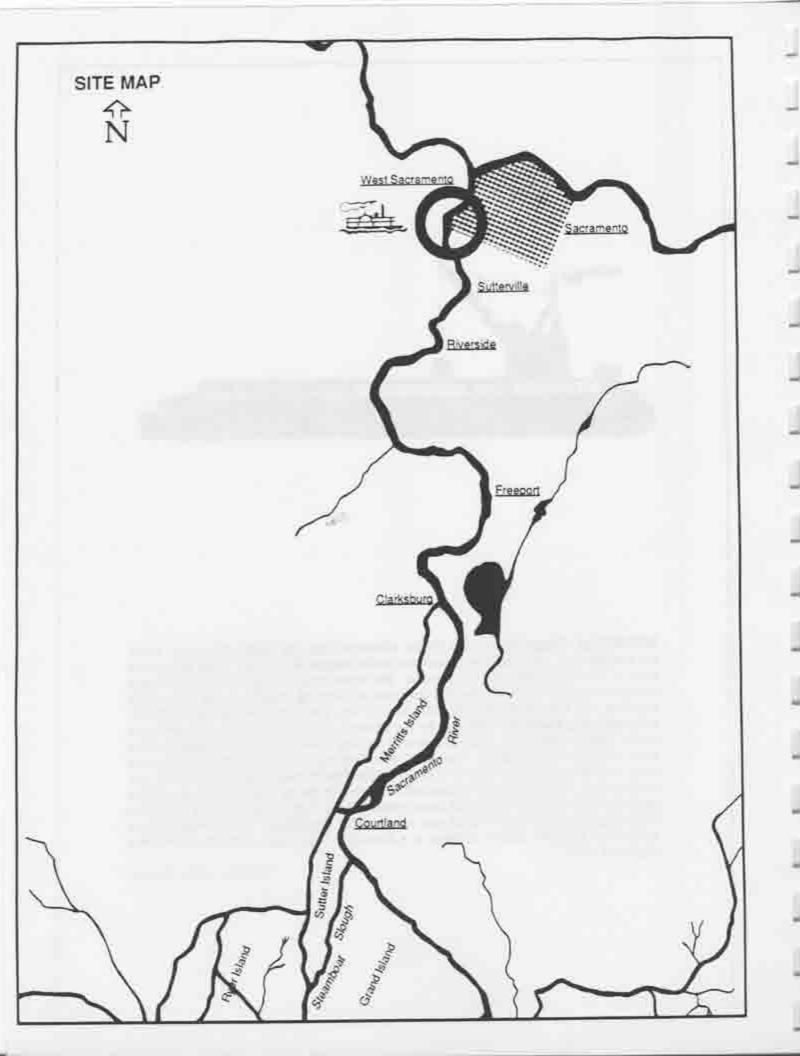
2/23/1860, Sacto. Union

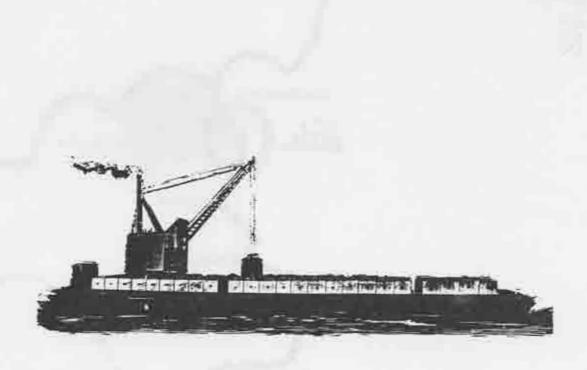




MONITOR "Barge Burnt - On Friday afternoon last, the barge Monitor, bond for Sacramento, was burnt and sunk two miles below Rio Vista. This barge was built of the hull of the steamer Monitor, the machinery having been removed and the hulk rassed down to answer the purposes of carrying freight. At the time of the accident, she was freighted with thirty tons of hay, also a large wagon worth \$300, and was being towed up to the city by the steamer, Christina. There were two men on the barge at the time. They discovered the hay to be on fire and commenced at once to throw off the bales. The wind was blowing so violently that by the time they had thrown fifteen bales into the river the flames had spread over nearly the entire cargo. The men were compelled to jump overboard and cling to the rudder until the barge floated in near the shore, when one of them swam to shore and aided in saving the other, who could not swim. The Christina was compelled, on account of her own safety, to keep at a distance. The barge burnt to the water's edge and sunk."

7/25/1864, Sacto Union

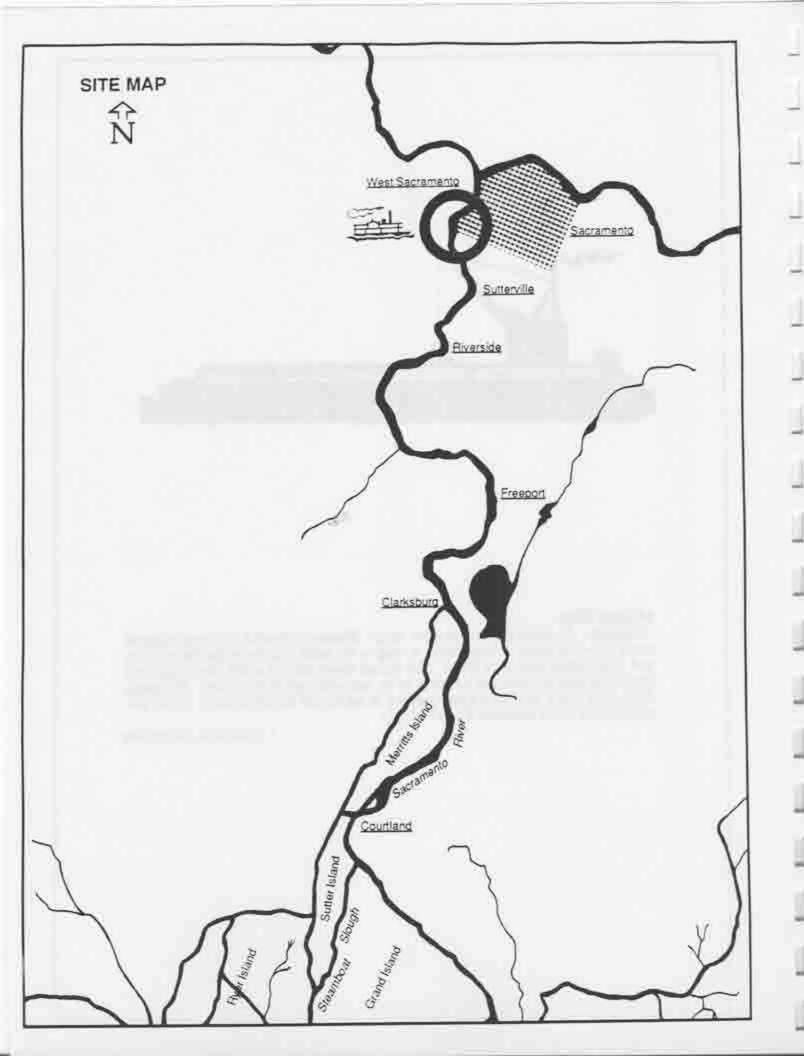


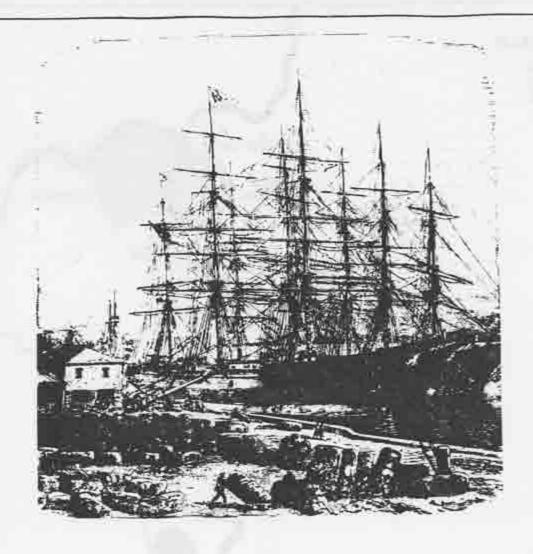


MOSQUITO

"Snagged. - Yesterday afternoon, the barge, Mosquito, loaded with one hundred cords of wood, from Colusa, struck a snag in the bend just above the Sacramento and Yolo bridge and soon filled. She drifted down, passed under the bridge, and leaned against the sand bar which is to be met with opposite the city. The barge Star of the West has since been engaged in taking off the Mosquito's wood and transferring to the schooner Fourth of July.

6/29/1864, Sacto. Bee

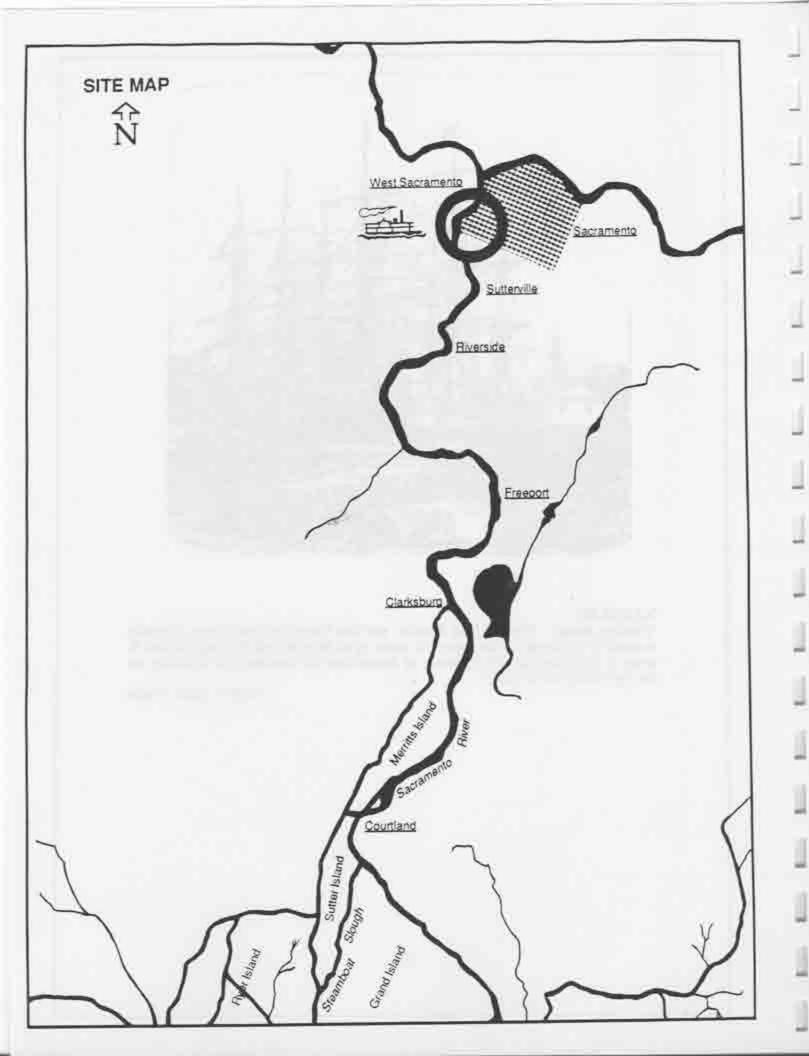


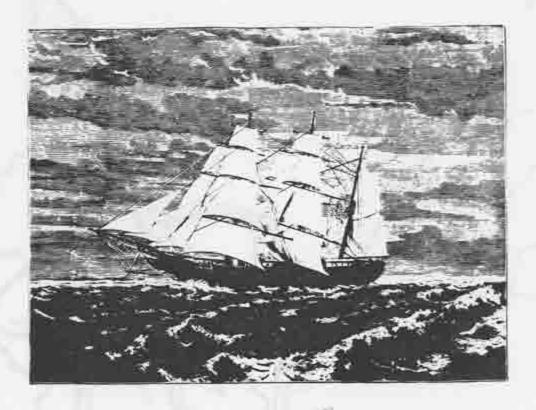


NATALIE

"Passing Away. - The old hulk Natalie, that has for so long past been solemnly moored to the levee, at the foot of N street, is to be removed to a point below R street to be broken up. The process of demolition was commenced yesterday on the light structure on deck."

3/6/1856, Sacto Union





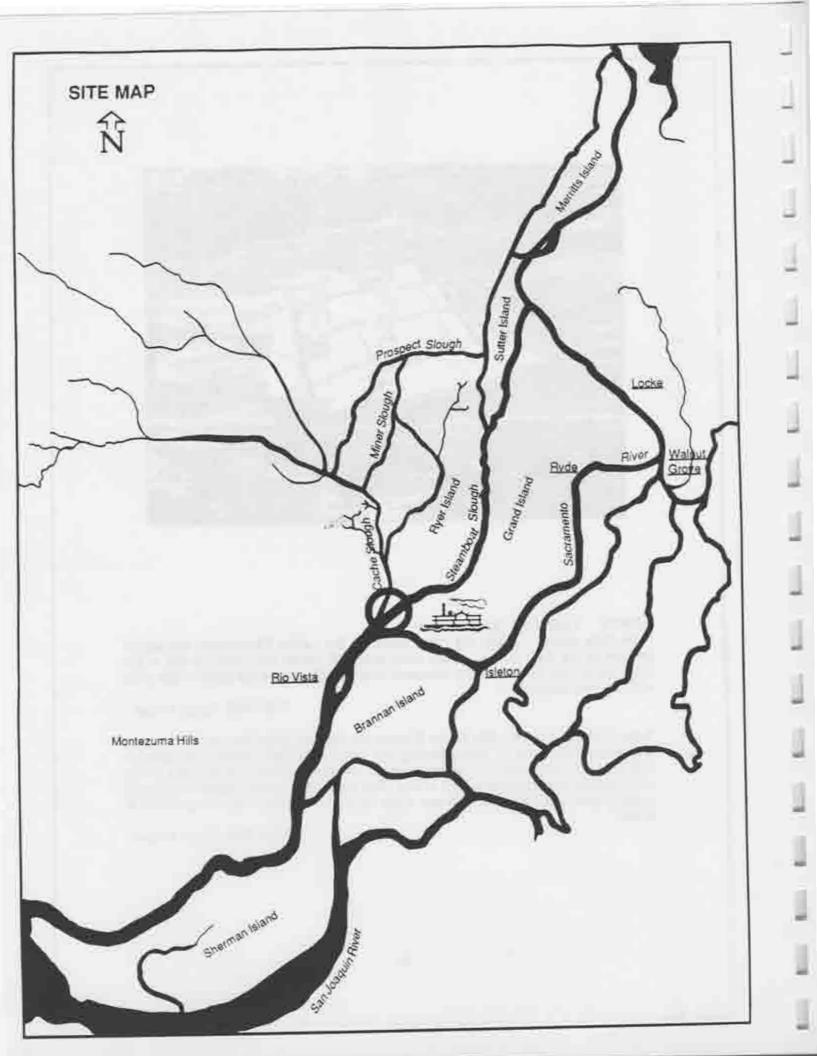
NINUS 11/16/1861, Sacto, Union

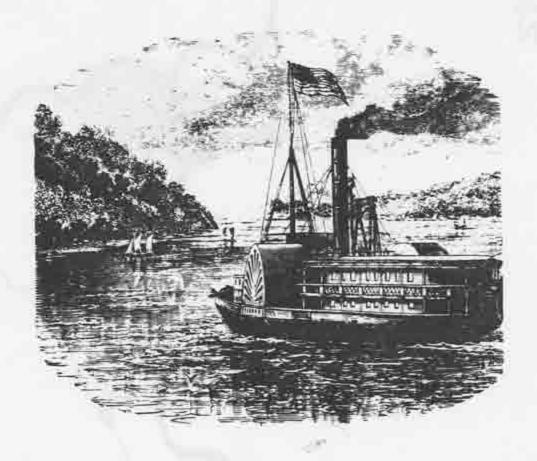
"The bark, Ninus - Under the supervision of the Levee Committee, the upper portion of the bark Ninus, in the river below R street, has been cut off at the water's edge and removed. It is presumed that the effect upon the eddy at that point will be advantageous."

7/30/1868, Sacto, Union

"Levee Improvements - The Levee Committee reported yesterday to the Board of Supervisors in favor of strengthening the levee at Rabel's tannery by another bulkhead. An engineer will be employed to report an estimate of the cost of the work before any decisive action is had. The same Committee report in favor of removing the bulk of the bark Ninus from its present location below the feet of R street."

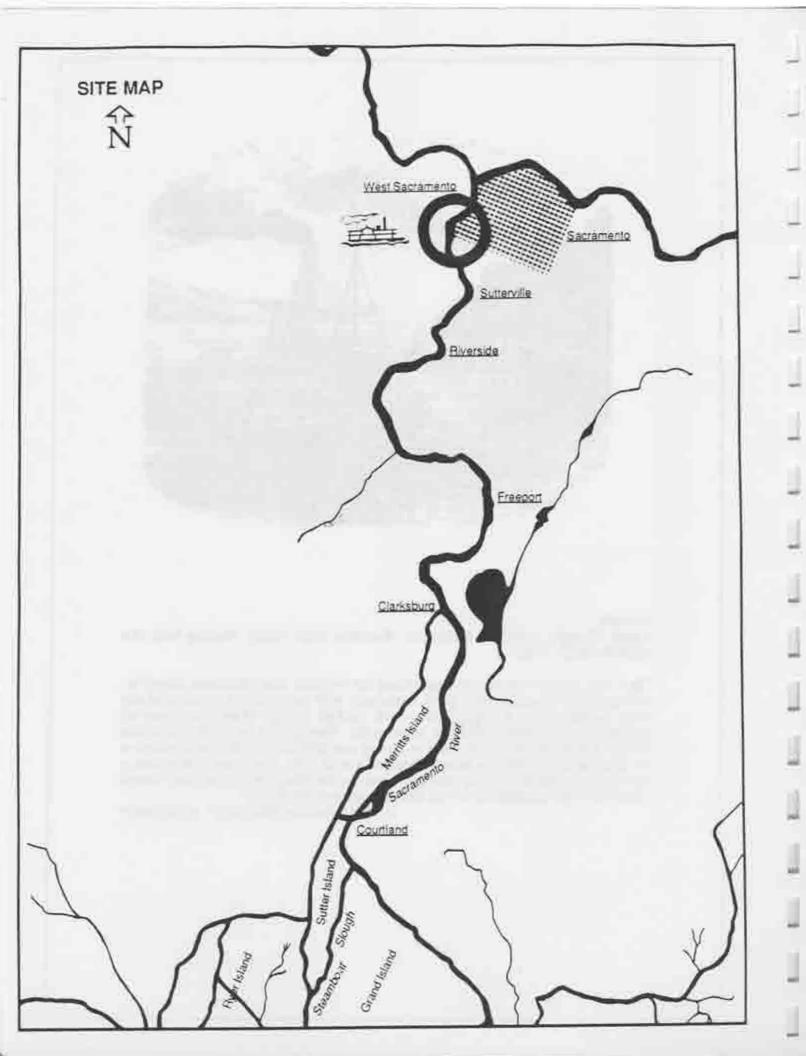
7130/1868, Sacto. Union





Nevada
Cache Slough; mired in quicksand. Remains there today. Racing with the NEWWORLD. 1863.

"In a race, the New World having chased the Nevada into Steamboat Slough at full speed, the leading craft's pilot, apparently with too much on his mind at one time, failed to note a slight swirl which marked a snag. There was a roar of splintering timber and the Nevada began to fill. They got her on a bank near Cache Slough before she went down, and so no one was drowned; but the bank proved to be quicksand, and the big steamer became a total loss.... for years, there were a few traces of her bones near the point were Cache Slough and Steamboat Slough empty into the Sacramento, not far from the town of Rio Vista."

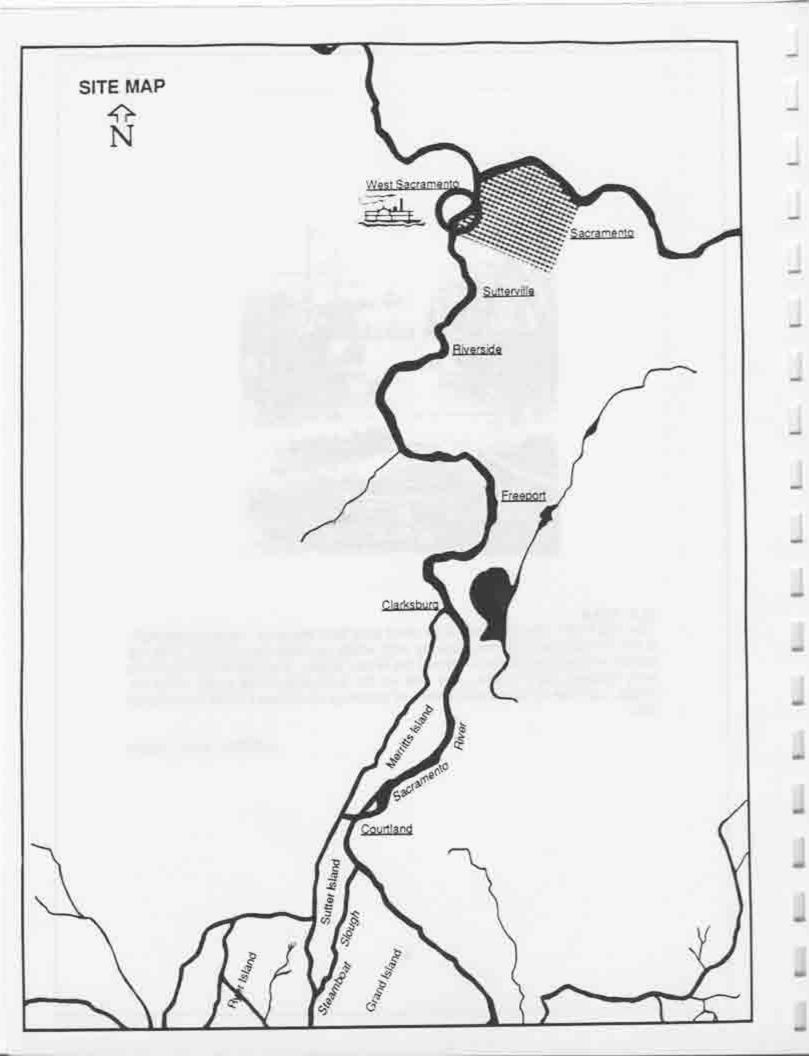


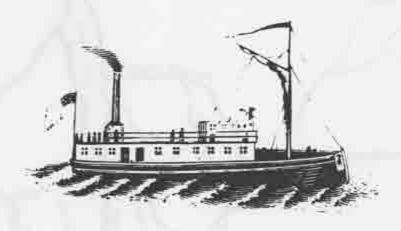


OLD HULK

"The Old Hulk - The members of the chain gang have removed from the old hulk, at the Nevada's landing, the planking with which the deck was covered. The old lumber will be taken to the vicinity of the Water Works. The hulk will probably be sold, although the proposition to sink on the Yolo side of the river, above the bridge, has been agitated, with a view of throwing the channel to the Sacramento side."

3/12/1863, Sacto. Union





 K. Small steamer burned on the Yolo side opposite M Street. 3 July 1865.

"Steamer Burnt.- Between two and three o'clock yesterday morning the small steamer O.K. on the Yolo side of the river, opposite M street was destroyed by fire. The O.K. belonged to Captain Allen. She has been used on the river for two or three years past for towing schooners, carrying wood, grain, etc. When she had burnt she had on a cargo of wood which she had brought from the upper Sacramento, designed for San Francisco. The orgin of the fire is not known. A portion of the hull of the steamer still remains above the water near the Yolo bank. No general alarm occurred in the city, although the city front was fully illuminated by the burning boat."

7/3/1865, Sacto. Union

